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ABSTRACT

This document presents the proceedings of a conference on the issues of intellectual property rights in a technology-driven environment. Following an introduction which summarizes the conference presentations and discussions, copies of the five presentations are provided: (1) "The OTA (Office of Technology Assessment) Report on Intellectual Property Rights" (D. Linda Garcia), which provides a general overview of the OTA report; (2) "The End of Copyright" (Robert J. Kost), which provides a legal overview of the OTA report; (3) "The New Technologies" (Ralph Oman), which presents the position of the appropriate U.S. Congressional Subcommittee on intellectual property rights; (4) "Current Bibliographic Database Ownership Issues" (W. David Laird), which presents a librarian's view of these issues; and (5) "ACS (American Chemical Society) Journals Online: Is It Being Downloaded, Do We Care?" (John A. Hearty and Barbara F. Polansky), which presents real-life property rights situations in the private sector with possible solutions. Also included is a summary of the Business Meeting of the Library of Congress Network Advisory Committee. Two appendixes contain the meeting agenda and a status report on National Information Standards Organization Standards Activities as of April 3, 1987.

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Intellectual Property Rights in an Electronic Age

Proceedings of the
Library of Congress Network Advisory Committee Meeting
April 22-24, 1987

Network Development and MARC Standards Office
Library of Congress
Washington

1987

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FOREWORD

The issues of intellectual property rights in the technology-driven environment were the concern of the Library of Congress Network Advisory Committee's program session during its April 22-24, 1987 meeting. The major focus of the program was the 1986 report of the U.S. Congressional Office of Technology Assessment "Intellectual Property Rights in the Age of Electronics and Information." Invited speakers set the stage to provide NAC members with a better understanding of the issues involved. Their presentations included a general and legal overview of the OTA report; the affirmation of the 1976 Copyright Act; the position of the appropriate U.S. Congressional Subcommittee regarding intellectual property rights; a librarian's view of bibliographic database ownership issues; and presentations of real-life property rights situations in the private sector with possible solutions.

I gratefully acknowledge the efforts expended by the Program Planning Subcommittee--Carol C. Henderson, American Library Association; Shirley Echelman, Association of Research Libraries; Robert L. Oakley, American Association of Law Libraries; David Y. Peyton, Information Industry Association; and James C. Riley, Federal Libraries Information Center--to make the meeting a success. The Program Subcommittee joins me in thanking all those who prepared papers and gave presentations as well as Sigrid G. Harriman who prepared summaries, edited papers, and put the proceedings together.

The document has been issued within the Network Planning Paper series. It should be noted that the opinions expressed in the proceedings are those of the individual persons and do not necessarily represent the opinions of their organizations.

Henriette D. Avram
Chair, Network Advisory Committee

December 30, 1987

ATTENDEES

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American Library Association	Joseph F. Shubert Carol C. Henderson
American Society for Information Science	Ward Shaw
Association of American Publishers	Sandra K. Paul
Association of Research Libraries	William J. Studer
Bibliographical Center for Research	David H. Brunell
Chief Officers of State Library Agencies	Richard Akeroyd
Cooperative Library Agency for Systems and Services	Ronald F. Miller
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Association for Library and Information Science Education	Toni Carbo Bearman

INTRODUCTION

"Intellectual Property Rights in an Electronic Age" was chosen as the theme for the Library of Congress Network Advisory Committee program session on April 23-24, 1987, to provide the members of NAC with a better understanding of the issues of intellectual property rights in the new technology-driven environment. A meeting on this topic represented the first implementation of an item from the action agenda approved by NAC in December 1986. The objectives of the April program were to (1) increase awareness of the ways in which new information and communications technologies are challenging the intellectual property system, including legal, economic, social and political pressures, and the changing and often multiple roles of the players; (2) identify particular problems and/or opportunities for library and information networking; (3) encourage planning for these changes within the networking community; and (4) develop policy objectives for appropriate action by NAC member organizations. The point of departure was the April 1986 report Intellectual Property Rights in an Age of Electronics and Information, by the Congressional Office of Technology Assessment.

OTA project director D. Linda Garcia, as the first speaker, explained that the eighteen-month-long study was commissioned by Congress to examine the continued effectiveness of the federal copyright law as a policy tool in light of new information and communication technologies. She described the project's conclusion as follows: "Just as the technologies of printing gave rise to the need for a copyright system in the first place, so too the new technologies are creating major problems for the system, problems that might only be resolved by significant changes in the intellectual property system itself." Further, the OTA "told the Congress that as a society we are only at the beginning of a technological revolution and so the problems for the intellectual property system are long term. ... While they might adopt some piecemeal measure now to deal with the situation, they would probably have to revise these mechanisms or completely change them over the next decade."

From their various perspectives, most of the speakers and NAC representatives agreed with this conclusion. Robert Kost, the legal adviser for the OTA project, went beyond the report to describe three historical periods. The first was the Age of Static Media, from the Gutenberg printing press through the end of the nineteenth century, a period of clear distinctions between hardware

and software and between inventions and writing, and in which the process of printing provided a commercial bottleneck through which the sale and distribution of copies could be controlled.

In the Age of Dynamic Media, beginning with the twentieth century, copyright lost control of the bottleneck. Since it was no longer possible to control copies, attention shifted to the uses made of the work itself. Today we have the emergence of the Age of Digital Media, with fragments of text floating in bit streams across national borders. Kost noted the OTA report's distinction between works of art, such as novels; works of fact, such as stock market information; and works of function, such as computer programs. Works of function, he suggested, are more coherently treated as patentable inventions. Copyright "is a slender reed upon which to hang protection of computer processable works of fact." He predicted that in the courts the emphasis would continue to be on infringing conduct rather than infringing works.

According to the next speaker, Register of Copyrights Ralph Oman, the 1976 Copyright Act, by limiting copyrightability to only two tests--originality and fixation in a tangible form--was intended to produce "a technology-independent, medium-neutral model of a modern copyright law." However, it is difficult for any law to be independent of the state of technology at the time of its enactment, and the courts have not interpreted the law as expansively as Congress intended.

Michael Remington, counsel to the House Judiciary Subcommittee on Courts, Civil Liberties, and the Administration of Justice indicated that Subcommittee Chairman Robert Kastenmeier tries to balance the interests of the public as users of copyrighted works with the interests of copyright proprietors. He acknowledged incredible tensions in the area of new technology, said that how Congress frames the issues is often as important as its conclusions (one of the reasons for the OTA study), felt that recently many intellectual property issues were being addressed outside of the congressional subcommittees with responsibility for intellectual property, and noted some pressure for a U.S. Copyright Agency.

W. David Laird, University Librarian at the University of Arizona, who had chaired the ALA Task Force on Bibliographic Databases, described himself as "Daring Dave of the Desert" in suggesting that we might be better off with no copyright laws. He felt the current law is not working as it applies to nontraditional media, and that no single law applicable to both print and nonprint materials would be satisfactory to a large majority of stakeholders. Different rules should apply to works of imagination, works of fact, and works of function.

John Hearty and Barbara Polansky of the American Chemical Society provided two different perspectives on the question of

whether ACS databases are being downloaded and "do we care?" Hearty, manager of electronic publishing, and Polansky, copyright administrator, agreed that ACS's Chemical Journals Online was being downloaded. From the marketing point of view, a database vendor wants products used; copyright violations are not a major concern, especially minor violations where reselling is not involved. From the copyright administrator's point of view, downloading is high on the list of concerns. Polansky believed the copyright law was the first line of defense, but because of the grey areas of the law, ACS uses contracts to spell out the fees for downloading and the conditions under which it is permitted.

David Peyton, director of government relations for the Information Industry Association, gave an overview of recent high technology intellectual property issues. He felt the OTA report rehashed too many "old" issues and did not tackle the leading edge issues raised by new developments such as a syntactic analyzer which produces abstracts from full text and a program called "Readware" which translates a query in any of ten languages.

The ensuing discussion among NAC representatives made clear that the OTA report and the points made by the speakers raise fundamental questions for libraries and network users, including those of defining display, performance, and compilation in databases in the light of current and anticipated technology. Discussion also showed that there continue to be major differences in interpretation of "fair use" in photocopying, as well as in varying perceptions and practices in observing the copyright law and contracts regulating the use of databases, software, and other properties. There were also questions about the degree to which the public and library staff understand and agree with the intentions of the copyright law and the degree to which they comply with it.

Such thorny questions do not lend themselves to easy solutions, although the speakers suggested a number of different approaches to various aspects of the problem. Robert Kost recommended a return to the common law doctrine of misappropriation. Ralph Oman suggested further reliance on royalty solutions. David Laird proposed the social theory concept of distributive justice as guiding principle for copyright protections. ACS's Hearty and Polansky rely increasingly on contracts. David Peyton saw a need to consider an unfair competition statute in the high-tech arena.

Given a perplexing subject and knowledgeable speakers, it was not surprising to hear strong and differing perspectives expressed and provoked. Fortunately the speakers were also lively and humorous. The session achieved its main purpose of increasing awareness of the ways in which new information and communication technologies are challenging the intellectual property system. NAC will discuss the policy implications of these issues at its next meeting.

We are grateful to Michael Remington and David Peyton for attending the meeting and are pleased to have had the benefit of their expertise and up-to-the minute information from the congressional and private sectors, although we do not have written statements of their presentations.

Copies of the full OTA report, Intellectual Property Rights in an Age of Electronics and Information, may be purchased for $15 from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20401. (Cite stock number 052-003-01036-4 when ordering.)

Prepared by: Carol C. Henderson

THE OTA REPORT ON INTELLECTUAL PROPERTY RIGHTS 1/

D. Linda Garcia
U. S. Congressional Office of Technology Assessment

It is a pleasure to be here this morning to speak before the library community about our recent report, Intellectual Property Rights in an Age of Electronics and Information. The last time that I spoke before librarians--which was almost five years ago--was to talk about OTA's study on educational technology. In that study we identified a trend which we saw as being problematic. It was the trend towards the privatization of information. What we suggested was that, as information and knowledge come to be treated more and more as commodities, public institutions such as schools, museums, and libraries would suffer from cream skimming--that is from private enterprises delivering to the profitable sectors of the market leaving the public sector to provide for the unprofitable ones. As I was preparing my remarks for this morning, I was struck by how interrelated today's subject is to my earlier conversations with the library community. In fact, any discussion of intellectual property rights must entail a discussion of the privatization of information. For it is by the granting of intellectual property rights that governments give intellectual works the status of property. Intellectual property rights allow intellectual works to be treated as commodities.

It is this linkage with information that gives special importance to our study, as we move towards becoming an information-based society. Because intellectual property policy, and especially copyright policy, serve as policy tools that structure the use and flow of information, it is likely to play a major role in an information age. How the intellectual property system is structured will determine not only which individuals and groups benefit from the new opportunities afforded by the new technologies, but also in what ways and the extent to which, as a society, we might take advantage of them.

1/ This presentation is based on a speech given on April 23, 1987, at the meeting of the Library of Congress Network Advisory Committee.

Before I get to the subject of our recent assessment, however, I would like to take a few minutes to say something about the agency we work for, the U.S. Congressional Office of Technology Assessment. For it is perhaps because of the nature of our agency and its particular mission that we took a somewhat unprecedented approach at looking at intellectual property issues and arrived at conclusions that set a number of people aback, especially many of those in the legal community.

OTA is a research arm of Congress, much like the Congressional Research Service of the Library of Congress, the Congressional Budget Office, and the General Accounting Office. What distinguishes us from these other agencies is our specific mandate to look at the long term impact of technology on society.

Our agency was established by Congress in 1972, with the passage of the Technology Assessment Act. If you think back to the period of the Sixties--the period immediately preceding the establishment of OTA--you will recall that it was a time of considerable domestic turmoil, a time when there was, in fact, a growing disillusionment with many established social institutions, both public as well as private. Part of the disillusion was the result of the public's growing awareness of some of the negative aspects of technology. It was during the early sixties for example, that Rachel Carson first published her book, Silent Spring, describing the harmful effects that DDT [dichlorodiphenyltrichlorethane] was having on birds and wildlife. And it was in the mid-sixties that Ralph Nader in his book, Unsafe at Any Speed, first told Americans that the cars they were driving were dangerous.

We also discovered that technological impacts might extend and be experienced over time and space. We learned, for example, that if we wanted to understand the consequences of using DDT, we had to trace its effects through more than one generation of the life cycle of plants and animals. More recently, we have found that sulfur dioxide, even if it is generated by coal-fired utility plants in the midwest, can travel as far as Canada and, in the process, be transformed into acid rain.

Given the growing number of technological issues that society had to face, and an increased awareness of their complexity, Congress decided that it needed to have more and better information about how new technologies might affect society. Rather than rely on other institutions to provide that information, Congress, much in the tradition of American politics, wanted to have its own source of information, independent of the Executive and the Judicial branches of government. It was for this reason that Congress set up OTA.

OTA, then, was created to do technology assessment: to look at the long-term impact of technology on society. This does not mean that we take a position on technology--that we are either for or against it. Rather, we try to plan for technology. We try to

anticipate its unintended consequences so that we can plan ahead, so that we can try to avoid, or at least ameliorate, the negative consequences and take full advantage of the benefits that new technologies afford.

And it was this focus on technology, and our concern about the future, that led the House and the Senate Judiciary Committees to request our study on intellectual property rights in the spring of 1984. The two committees were concerned that technological advances were outstripping the law of intellectual property.

And, indeed, this was the case. For in 1974, Congress had established a commission, the Commission on New Technological Uses (CONTU), to look into the problems that the new technologies--and in particular, reprography--created for intellectual property. Two years later, the recommendations of the commission were incorporated into the 1976 Copyright Act. With this law, Congress felt it had resolved the intellectual property problem once and for all. For the law included words that were designed to neutralize technological change. It defined "authorship" and "intellectual works" in such a generic way that the definition would continue to serve regardless of the technology that would come along. The law protected "original works of authorship fixed in any tangible medium of expression now known or later developed." But almost as soon as the new law was passed, it was out of date. And so, in 1980, Congress had to amend the 1976 Act to address the unique problems presented by computer software.

It is against this background that CONTU asked us, "Is it possible to design a law that will not be immediately out of date? Where will technological change lead? How will it affect our traditional view of intellectual property." And, as I said before, the answer we gave was not particularly reassuring.

What we found was this: just as the technologies of printing gave rise to the need for a copyright system in the first place, so were the new technologies creating major problems for the system, problems that might only be resolved by significant changes in the intellectual property system itself. This was not a popular conclusion. It was not popular in the legal community because most lawyers believe that the law has great resilience and can always be stretched to accommodate new technologies. This conclusion was also not welcomed by copyright proprietors who, while urging Congress to address the issue of technological change, wanted a solution to the problem not a more complex restatement of it. And we did not offer any simple solutions. On the contrary, OTA told Congress that as a society we are only at the beginning of a technological revolution and so the problems for the intellectual property system are long term. We told them that, while they might adopt some piecemeal measure now to deal with the situation, they would probably have to revise these mechanisms or completely change them over the next decade.

As I said before, since delivering our report in the spring of 1986, I have come across a number of people who believe that we have severely exaggerated the problems caused by new technologies. Such reactions have led me to reflect on the reasons for our different points of view. I think there are probably four basic reasons, each of which has to do with the approach that we used. In fact, they all stem from our mandate to do technology assessment. Let me briefly list them for you.

First, instead of trying to neutralize technology, as the 1976 law tried to do, we viewed technology as if it were an independent variable, a major force. Moreover, we looked at the long term effects of technology many of which I will describe in a moment, not at the present ones.

Second, we conceived the law of intellectual property to be a public policy tool designed to achieve a particular end, and not just as a given. Thus we were able to look at how effective the law is in terms of meeting its public policy goals, and not just--as some lawyers are prone to do--in terms of whether and how it can be applied in a court of law.

Third, the reason that accounts for OTA's distinct conclusion stems from the fact that we looked at the intellectual property law as part of a system which is itself part of a larger social system. Beginning with the premise that the intellectual property system is itself couched within a larger social system, one begins to ask a whole range of questions that are generally not considered when thinking about intellectual property issues. For example, our framework led us to ask not just how technology impinges upon the law itself; but also how technology affects society, and how in turn, these social changes might affect the law. Thus we looked at such things as how the widespread availability of new technologies affect peoples attitudes about the law, their expectations about how technology should benefit them, and their willingness to comply with the law.

Fourth, the reason for OTA's distinct conclusions has to do with the openness and interactive nature of our agency's assessment process. Because we incorporated input from a great number of people, many of whom had previously not been a part of the intellectual property debate, we had a fresh perspective, and we were far reaching in our questions and answers. I would like to dwell for a few moments on the subject of this process because I am convinced that our work is as much process as it is product. I hope I can convey the importance of the process by reminiscing a little bit about how we carried out the intellectual property study.

My first job as project director was to put together a project team. I emphasize the importance of this task because I think that one of the reasons why we have failed in the past to anticipate how technology might affect the intellectual property system is because we have tended to consider the problem from one

single vantage point--in this case, the view of the lawyer. By saying this, I do not want to downplay the viewpoint of the legal community; for the problems that stem from viewing technology from a single perspective would have been the same regardless of the discipline that we used. To avoid this problem in our study I tried, from the very beginning, to build differences into our staff--differences with respect to personal style as well as to educational background and training. In fact, I believe that a project staff develops a kind of personality all its own, and that the way people interact--or come together as a group--can be an important determinant of which the many potential stories about a technology a particular assessment will tell.

In selecting staff for the intellectual property study, I looked for generalists rather than specialists; they seemed to have fewer preconceived notions. It was essential to have a fresh perspective in the intellectual property study. In fact, our innocence in the area--some may have called it naivite--served us well. For, although we had to work very hard initially, just to get up to speed, we had the advantage of not knowing what had gone before. We were able to step on a few peoples toes, because we were unaware that they were there. But what I looked for above all in selecting our staff were people who were willing to cross the boundaries of their own disciplines and to think in entirely new ways. To keep us interdependent, and to maintain our interdisciplinary approach, I asked each staff member to keep everyone else on the staff informed about his or her particular area. This way we all had something to say about everything, which kept us talking and challenging each other, and eventually knit us together as a group.

Almost as important as our project staff was our advisory panel, and it was just as much a balancing act putting it together. The project's advisory panel, required in accordance with OTA's charter, is designed to assure that all the parties having a stake in the outcome of a study will have a guaranteed opportunity to make their concerns known to the project staff. In building a project team, we spent a lot of time trying to get the right people for the panel. We wanted people who would work really hard (which meant that they shouldn't be too famous); and who would interact well with each other (which meant that there shouldn't be too many strong personalities).

We turned to our panel for advice and comment throughout the entire course of each assessment. But it was by no means the only way in which we conducted research, generated information, or reached out to the public. Because we are by trade generalists, moving from one project to the next, we had to depend on contractors to provide us with particular forms of expertise. And each contractor report was reviewed by a number of people. In fact, we often used contractor reports not just as a source of information in themselves, but also as a mechanism, through the review process, to generate additional research questions and information.

The work of contractors was also supported by workshops and interviews with individuals. In the intellectual property study we held eight workshops, four on new technologies, one on law, one on economic issues, one looking at the creators, and one looking at the opinions of youth. We also conducted a major public opinion survey, and a survey of the attitudes of small businessmen. We found such workshops to be very useful; they served as an additional outreach for the OTA staff, and they also allowed us to explore issues in depth with a group of experts or with interested parties.

I stress the OTA process because I think it is the key to understanding the broad range of questions that we asked, and hence the far reaching conclusions to which we came. Before I describe these conclusions in more detail, let me first give you a brief description of the intellectual property system, and a summary of the characteristics of new technology that are problematic for the system.

Intellectual property law is generally said to include three major bodies of law--copyright, patents, and trade secret. All of these laws are concerned with the flow of information in society. This is especially true of the copyright system, which was designed specifically to deal with the socioeconomic changes brought about by the printing press, and it is in the realm of copyright that I will focus my remarks.

The domestic intellectual property law is rooted in the U.S. Constitution. Under the law, the government is authorized to grant intellectual property rights not as rewards but as inducements to authors and inventors to create and disseminate intellectual works. The statutory nature and purpose of the constitutional authorization is stated explicitly in the 1909 Copyright Act:

> The enactment of copyright legislation by Congress under the terms of the Constitution is not based on any natural right that the author has in his writings, for the Supreme Court has held that such rights as he has are purely statutory rights, but on the ground that the welfare of the public will be served and progress of science and useful arts will be promoted .... Not primarily for the benefit of the author, but primarily for the benefit of the public such rights are given. Not that any particular class of citizens, however worthy, may benefit, but because the policy is believed to be for the benefit of the great body of people, in that it will stimulate writing and invention to give some bonus to authors and inventors.

The mechanisms by which the intellectual property system worked in the past were straightforward. The Government granted rights to an author or inventor. From this point on, the Government's role was relatively minor. Rewards were determined in the

marketplace. In order to benefit from copyright, an author had to publish his works, thus making them available to the public. In order to obtain a patent, the inventor had to reduce his ideas to useful applications. And thus there was a bargain, so to speak, between the author and the inventor and society. The holders of copyrights and patents were responsible for detecting infringements and preventing unauthorized use of a work. Enforcing one's right was not unduly burdensome. This was particularly true in the case of copyright. Given the expense and the organizational requirements needed to reproduce works there were only a limited number of printers, and thus it was relatively easy to keep track of their activities.

We see then that the printing press gave rise to the need for a copyright system, because it was printing that made the widespread reproduction of works financially possible and that created an economic market for intellectual works, and with it an incentive to copy. Copyright prevented the pirating of works because the publisher acted as a bottleneck. He was generally the ultimate holder of copyrights, and he alone had the skills, capital, and equipment to copy.

A similar set of circumstances is occurring today with the new technologies, but it is occurring on a much broader and far reaching scale. The ability to copy is getting cheaper, the speed at which works can be copied faster, and the value of information greater. As we shall see, what makes this situation significantly different is the fact that with the new technologies there is no longer a bottleneck.

To illustrate my point, let me just compare print and digital technologies. With mechanical print, intellectual works were produced in tangible, fixed "units" and their production was centralized and required expensive machines and special skills. Infringements were easily identified. The author received a per copy royalty on the first sale of a copy. The copyright holder retained the right to print and publish "the work." Individuals could not only read a work, they could dispense with their copies as they saw fit. They could quote or cite it, copy parts of it by hand, sell it, rent it, or even destroy it.

In contrast, in the era of digital, electronic technology, intellectual works are simultaneously available to many individuals who may access them from a central store of works, or a "database." With the new technologies, intellectual works are, moreover, reproducible at very fast speeds and low costs. And now perfect copies can even be made from copies. The technology is also extremely versatile; the media are very high in capacity and many types of works (such as text, music, video-taped or filmed pictures) may be stored and communicated digitally. In addition, almost anyone can now reproduce a work, as very highly capable machines become ubiquitous in homes and offices. These machines can also be linked by switched telephone circuits so that intellectual works can

be transferred in much greater quantity and with impunity. Furthermore, the new technologies are dynamic, in that they are interactive and constantly evolving. They are also processible, allowing machines to be programmed to transform and manipulate works. Finally, the new technologies are autonomous because they permit works to carry out functions. Works are no longer just meaningful, as were traditional copyrightable works, they actually do work.

Keeping in mind these technological changes, lets consider now, in more detail, the kinds of problems that digital technologies present for the intellectual property system.

First of all, there is the problem of identifying "authorship" and "works." To satisfy the requirements for copyright protection one has to be able to identify who has authored what. While this was a relatively simple thing to do in the era of print, it becomes increasingly more difficult with digital technology. For, as I have already mentioned, today's intellectual works may not be fixed. In fact, as they appear in digital form, they are intangible and reprocessible.

The new technologies also give rise to what we call the problem of derivative use. The repackaging of information and the creation of new information products made possible by new technologies raise serious questions about who should be rewarded for which contributions. By law, the original copyright holder is entitled to the rights of all subsequent works derived from his work. In an age of information, however, where the value in intellectual materials is more often than not centered in repackaging and reprocessing, one must ask whether an incentive system that favors the original creator is still appropriate.

Add to the characteristics of intangibility and reprocessibility those of speed and decentralized digitalized networking, and one has the problems of identifying infringements, protecting the integrity of works, and thus enforcing intellectual property rights. This is no longer a simple system whereby an author or inventor can monitor his own works. And without this ability to monitor works and to enforce rights, there is a much greater incentive to copy.

And when we consider the potential scale and scope of copying that new technologies allow, we can see that there may now be a problem of private use and private copying. Private use and private copying has never been specified to be illegal. There was no need. For given the technological limits to copying, private use did not constitute a significant economic threat to the creators and providers of intellectual works. Today this may no longer be the case, given the potential for copying in the aggregate. Thus Congress may have to decide the issue. And, if it decides in favor of limiting private use, it will also have to devise a workable scheme for enforcement.

Still another problem we identified in our study is the problem of how to incorporate functional works--that is works such as a chip mask or a computer program--that control a process. Because it is difficult to clearly distinguish between what is an idea and what is an expression in such works, they do not fit easily into the traditional categories of patent and copyright law. Given their unique nature, these kinds of works raise questions as to whether efforts to incorporate them into the existing law will undermine the basic intent of the intellectual property law.

These are the major problems that we identified for the Congress. We told them, moreover, that these problems would be more difficult to resolve then in the past when information-based products and services were peripheral to the performance of many social and economic activities and when people had lower expectations about their use and the profits that might be derived from them. In such an environment, issues involving the granting of intellectual property rights were easily worked out among the major players without much disagreement or public involvement.

Today, on the other hand, given the variety of opportunities that the new technologies afford, the increased value of information, changing relations among the traditional participants in the intellectual property system, and rising expectations--the number of stakeholders with disparate interests and competing claims on the system are greater than ever before. Under these circumstances, the resolution of intellectual property issues will be more problematic--requiring that more viewpoints be taken into account--and decisions about the distribution of incentives and rewards be made much more explicit.

Because of the far reaching impact of new technologies, the decisions that Congress makes about intellectual property policy will affect a broad range of other policy areas; communications, trade and international affairs, privacy, antitrust, education, public information, research and development, and tax policy. Therefore, in making decisions about intellectual property policy, Congress will also need to take into account the new issues, and to assure the coordination of policy making among the range of relevant policy areas.

Technological change is complicating the intellectual property system and our understanding of how it now operates is extremely limited. Moreover, because we are only beginning to move into the era of electronic information, the full impact of new technologies will not become totally apparent for some time. Fundamental changes are occuring in information technologies that will antiquate many of the policy mechanisms now in force, and bring new intellectual property problems requiring new solutions. Thus, even if Congress acts now in response to current problems, it will need to be prepared to act again within the next decade.

From these conclusion, you can see why ours was not a popular message to the Congress. If I have not convinced you of the seriousness of the intellectual property rights problem with these remarks, I hope that I have at least conveyed the importance and usefulness of the open and interactive assessment process. And if you are not yet converted, Robert Kost has something to say about "The End of Copyright."

THE END OF COPYRIGHT 1/

Robert J. Kost
U.S. Congressional Office of Technology Assessment

As Linda [Garcia] mentioned in her talk, we came at the question of technology and copyright with a different tack than that ordinarily taken by the law or lawyers; which is to say that, rather than reasoning back from a desired result to the required premises, we started with the premises and questioned them. This casts Linda, who was not among the ranks of lawyers in the first place, in the role of infidel, and myself, as an attorney, in the role of heretic. One of the great things about this country, though, is that we have replaced public executions with public speaking. I am happy indeed to be here today.

I'd like to offer my own rendition of "the big picture" that emerged from our work at OTA. Your efforts to link the libraries of the nation together are very much at the center of this big picture, and the copyright problems that you may encounter belong to a growing number of anomalies--deviations from a general rule or policy--within the copyright law. I believe that these anomalies, like the epicycles invoked to preserve the Ptolomeic view of the solar system, can be understood as indications of some very fundamental difficulties with the copyright system. The copyright system that grew out of the printing press placed the printer/publisher at the center of the known technological universe. Computers and telecommunications are creating a user-centered universe that copyright has yet to come to terms with.

In support of such a grandiose opening statement, I'd like to offer what I consider a useful historical approach for understanding where we are at present. I will argue that copyright and information technology, in contrast to their present antagonism, were originally wedded together, and coexisted in bliss for nearly three centuries. I will also argue that this marriage has been on the rocks since the beginning of this century, and will sketch

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1/ This presentation is based on a speech given on April 23, 1987, at the meeting of the Library of Congress Network Advisory Committee.

whether I believe the falling out is occuring. Finally, I'll hazard some guesses about what mid and long term reconciliations are possible.

I'd like to begin by laying some groundwork for this discussion, and by defining some of the terms I'll be using. And, where better to begin than with copyright itself. By copyright, I understand a set of positive rights (as opposed to natural rights) which attach to the particular expression or manifestation of information. Information is a more nettlesome concept, to which I'll return in a moment. It is often said that the function of copyright is as an incentive to create and distribute information. This is true, but what we really mean by this is that the function of copyright is to make information behave in the marketplace as if it were tangible property--hard goods like shoes, refrigerators, and automobiles. The way in which copyright accomplishes this is by use of a tautology; the res, the thing that is owned, is an original work of authorship, and an original work of authorship is one that is not a copy. Now this definition presents little difficulty for cases of "knock off" duplication, where a copy is a copy is a copy. But it becomes considerably more difficult in cases, such as the recent computer related litigation in Whelan v. Jaslow, where what is a copy must be determined ad hoc by identifying the so-called "expression" peculiar to a given original. Expression defines what is owned.

If, for the time being, we ignore these complexities, we can say very simply that copyright turns information into property. But information is a very reluctant form of property. Information, which I will define as the meaningful concatenation of symbols, images, or sounds, is neither naturally scarce nor naturally exclusive. It is not scarce because, unlike shoes, refrigerators, and automobiles, information can be given or taken with no diminution in the number of "pieces" of it available once it is produced (and there's the rub). Unlike tangible property, where 1-1=Ø, information has a strange arithmetic: 1-1=2. A corollary to this is that information is not exclusivity; it is not the case the either you or I must possess it at any given moment, as is the case with tangible goods. Instead, both you and I can possess it, and my possession is not in derogation of yours. Note that I'm not saying that copying a computer program doesn't displace a sale, nor that harm to a producer's market hasn't occurred; only that, in the case of information, the stolen goods need never leave the warehouse.

Scarcity and exclusivity, which do not come naturally to information, are nevertheless fundamental to the notion of property, and at the very heart of a market economy. It is, after all, how we tell buyers from sellers--sellers have, and buyers want.

And this is where copyright comes in. Because the Framers of the Constitution, and before them, the House of Lords, decided that having lots of books and maps and charts around was a good idea, and because the free market was so adept at providing other

types of goods demanded by society, some mechanism had to be found to remedy the market failure of information. Copyright was a truly ingenious solution; it made information plentiful by making it scarce, and available to all by making it exclusive. This was possible because information was always and everywhere to be found embedded in tangible goods--copies--which went proxy for information in the marketplace. What was bought and sold in the marketplace was wood pulp with ink stains--never mind the fact that what you were really after was the complete works of Thomas Paine or Charles Dickens. What we had going was a product compromise: information could be sold like goods as long as it acted like them.

This compromise, which is today coming unglued, really began in the mid-1400s, when Johannes Gutenberg concocted a clever, high volume, low overhead scheme for selling church indulgences; the moveable, interchangeable, type printing press. The invention of the printing press necessitated the invention of copyright. Because books could be mass produced in days rather than years, because printing allowed for the standardized, canonical version of works to appear, rather then being scattered in fragments throughout the monastaries of Europe, and because authors could be identified with their works, writings became a commercially hot item, and piracy followed in due course.

But if the printing press made copyright necessary, it also made it possible. Printing was a capital intensive, highly visible, 16th century high tech business. It formed a perfect bottleneck, or chokepoint, by which the king, through licensing, could control infringements--or more importantly at the time, sedition. Of equal was the fact that, once words were printed on a page, they stayed on that page--fixed, static, immutable, petrified on paper--never again to be word processeed. And, at the time, clear and common sense distinctions existed between hardware and software, between inventions and writings; no one could ever mistake the book explaning the construction of a coke oven for the cast iron real McCoy.

During this period, which I call the age of **Static Media**, copyright was essentially a form of commercial regulation, since the ability to "print, publish, and vend" a writing--the original copyright rights--lay exclusively with commercial enterprises, rather than private individuals. Infringement, where it occurred, was a business proposition, and not a matter of casual button pushing by private individuals.

The age of Static Media ended abruptly near the beginning of the 20th Century with the invention of new ways to move information through intangible, electromagnetic signals--telegraph, radio, and television--and with new ways of liberating information from the package in which it was sold--the paper copier, the tape recorder, and the camera. During this period, which in contrast to its predecessor might be called the age of **Dynamic Media**, copyright lost control over the bottleneck. It was no longer possible or adequate

for copyright to control the sale and distribution of copies. Instead, the Copyright Act of 1976, which was really a response to the dynamic media of 50 years prior, sought to control the use of the work itself. The distinction between the work and the copy in which it resides is a point belabored in sections 102 and 202 of the Copyright Act, and is a recognition of the fact that information is reverting to its elemental, nonproperty, form.

Today, with the emergence of what I call the age of **Digital Media** in the late 20th Century, we may have come full circle, returning in a strange way to a pre-Gutenberg era, with fragments of full text, searched and summarized by abstracting and indexing editors, floating in bit streams across national borders. The full impact on copyright of optical mass storage, computers and computer networks, analogue to digital conversion devices, satellite communications, and broadband fiber optic highways into the home will probably not be felt for some time. Nevertheless, I believe the enduring effects of modern technology on copyright can be sorted into basically two types: effects on practical matters such as enforcement and permissions, and effects on theoretical matters such as: "what is it that is owned, anyway?"

One of the charms of copyright was that it was esentially self-enforcing. Rights holders could spot infringing copies, and bring the infringers to justice with administrative mechanisms no more complex than the federal courts. Technology itself imposed limits on the ability of private individuals to avoid the marketplace. I suspect, for example, that the paper copier was never a real challenge to a finely bound book. But with information in digital media, the copy of the work does not degrade from generation to generation. Moreover, electronic communication allows copies to be transported anywhere on the planet at little less than the speed of light, without the hassles associated with cars and airplanes. One of OTA's contractors painted a particularly compelling illustration of the scope of this power, by supposing that a computer program was "shared" on a network by one person with two of his friends. These friends, in turn, "shared" with two of their friends, and so on, once every 15 minutes. In just 32 iterations taking just over 8 hours, the entire population of the planet could, in principle, be blanketed with 4.29 billion copies of the program. The chain letter has returned with a vengence.

Of course, this scenario supposes that the public is largely dishonest, which, according to a public survey conducted for OTA's intellectual property report, is not really true. Instead, the survey revealed that the public is by and large unaware of some of the more basic principles of copyright, and is apt to believe that they can do as they wish with their own possessions. But, even on the supposition that we have a law abiding, informed public, making full use of the available technology poses extremely cumbersome problems for the individual seeking permission from copyright holders. The Compact Disk-Read-Only-Memory, which holds over 550

megabytes of data, or over 200,000 pages of text, or copious amounts of music or still and motion picture video, is a case in point. Imagine that I am a law abiding CD-ROM based, value-added, information purveyor who wants to store a multitude of different texts, musical compositions, and images on my CD-ROM disk. To store anything on disk--possibly even for personal use--involves reproducing it under the terms of the Copyright Act. I have to get permission, and very likely pay royalties. Provided I know who they are, this may be as simple as making a phone call to hundreds or thousands of authors, copyright holders, or their assignees to negotiate their "OK." "Simple," of course, provided that I have a Wide Area Telephone Service line or plenty of spare change available.

If the attorneys of the copyright owners and I are able to reach some accord on the reproduction rights involved in my CD-ROM venture, we still have distribution, performance, and display to think about. Most CD-ROMs work in conjunction with computers, and it is a simple matter to have computers work in conjunction with communications facilities. Any communication of a work stored on CD-ROM (or any other medium) is probably either a performance or a display, whether sent to ten people at the Fairbanks Alaska Public Library via long haul network, or to one hundred people at the Library of Congress via Local Area Network. Now, if calling the distribution of a work over phone lines a performance or display sounds like an overly legalistic stretch, consider this: electronic distribution is not distribution at all--at least in the legal sense--since one can distribute only copies of a work, and copies are material objects under the law.

In any event, I'm back on the phone negotiating with an attorney, who probably wants to know how I intend to control the use of the material on the CD-ROM once the disk is sold. I probably can't answer... truthfully at least.

The enforcement and permissions problems are two sides of one coin known as transactions costs. The question in both cases is whether it will cost me more to enforce my rights in a work or to gain permission to use it than the revenues that that work generates. One way around the problems of transactions costs is to create a compulsory license and have the government pick up the tab for the costs associated with pooling and distributing income, but this will not work well for markets where there are an excessive number of hard to identify buyers or sellers, as is the case with the audio and video cassette markets, and probably the microcomputer software market as well. In this case, a tax can be imposed on blank media and revenues doled out to copyright holders based on an estimate of their share of the market which copying supplants. The problem with this is that, while single purpose media such as audio tape and possibly even floppy disks, may submit to market substitution analyses, versatile media, such as CD-ROM and eventually, erasible-programmable compact disk, do not--there is simply no way of estimating fairly how much these disks are used for recording

Michael Jackson and how much they are used for DBase III.

As difficult as the practical problems for copyright may be, the truly thorny problems are theoretical. In case of software, for example, I believe we have a choice between too little protection and too much; the protectable expression can either be the literal line by line code, in which case the protection is trivial; or the literal code can be interpreted in terms of the processes which it executes in a computer, in which case we have endowed the program with patent-like protection without a showing of novelty or advance over prior art (even supposing that a record of prior art exist, which it doesn't). To see how this is so, go back to the watershed case Baker v. Selden, which held that, though the petitioner's design for an accounting book could be copyrighted, the system of accounting that the book implemented could not. "There is a clear distinction between the book, as such, and the art it is intended to illustrate," said the Supreme Court, and the latter is protected, if at all, by letters patent, and not copyright. Now imagine that Selden's account ledger was written in computer code, and try to separate 'the book, as such, from the art it was intended to illustrate'. I cannot, and I suggest to you that the clear distinction has collapsed.

It is not clear yet what effect this confusion may have on the software industry. I understand, however, that Lotus Development Corporation, which is rightly jealous of its rights in its excellent 1-2-3™ software, is presently being sued by members of its intellectual and marketplace ancestor.

But I suspect this is the tip of the iceberg. The day is not long in coming when, within the limits of our ability to formalize the syntax and semantics of natural language, computers will execute programs based on commands in spoken English, and we will be face to face with the question of whether the logical structure of algorithms is copyrightable. In a way, such questions are here today; can the factory foreman who runs a robot arm through a series of steps, which are simultaneously recorded in code in computer memory, claim copyright in the procedure for welding a chassis to a frame?

But software is only part of the problem, and an argument can be made that software and other works of function, such as the nucleotide sequence that controls the manufacture of insulin in a microbe, are more coherently treated as patentable inventions, rather than copyrighted writings. But works of fact, such as stock market information, new stories, telephone directories, and the like are most emphatically not patentable, and their protection, absent trade secret, falls to copyright. Copyright in works of fact ostensibly protects only the organization, arrangement, design, and selection in works of fact, and not the underlying information. But computers are arrangers and designers par excellence; this after all, is the great power of text editing, spreadsheet, word pro-

cessing, and list processing programs. It would seem that copyright is a slender reed upon which to hang protection of computer processible works of fact. The recent case of West Publishing v. Mead Data, which held that West's system of pagination in its online database was copyrightable, has muddied the waters somewhat and I think we can anticipate more litigation on this subject as time goes on.

I'd like to close by hazarding a guess where all this is headed. For computer programs and for machine processible works of fact, I suspect that courts will continue in the direction that they are already going. That is, the focus will be on infringing conduct, rather than infringing works. Under this approach, which hearkens back to the common law doctrine of misappropriation, similarity between works becomes an indication of malfeasance on the part of a defendant, rather than the sina qua non of infringement, and it is the defendant's acts which constitute the important object of proof. This is a subtle, yet very significant shift, for it turns copyright on its head. It may in fact be the best way of avoiding the difficulties of treating information as property, while at the same time providing the software and database developer with the protection they need to conduct business. The question is whether case law can be fully developed within the confines of the current copyright law.

Although I once believed that software and associated developments in technology were the gordian know for copyright, I suspect the issues of enforcement, permissions, and transactions costs will loom larger as the first large scale attempts at an Integrated Services Digital Network begin in the early 1990s, and as computer networks proliferate and become common, and as digital audio and video tape, optical storage media, expert systems, and a host of other technologies converge in an interconnected information utility. Technology itself may provide some of the stopgap measures, with embedded copy or transmit disabling signals, public key encryption, and so forth. Compulsory licensing and collecting societies may also help to preserve some semblance of copyright, by providing for network access tariffs and sampling of usage. The real question is whether we want to continue to find patchwork solutions for the sake of preserving copyright, or whether there is some better way of taking full advantage of all that technology can offer, while at the same time observing the old addage: to every cow her calf.

THE COPYRIGHT LAW:
CAN IT WRAP ITSELF AROUND THE NEW TECHNOLOGIES? 1/

Ralph Oman
Register of Copyrights

Thank you for your invitation. I want to examine the current copyright law in the light of the many new space-age technologies that crowd in on us. I also want to try to answer the $64 question--can we continue indefinitely with the current law, or should we change it to accommodate these new technologies. You've just heard the speakers from the U.S. Congressional Office of Technology Assessment say that changes are needed. As Mario Cuomo would say, "Let's look at the facts." And let's talk about the 1976 Act.

Chrispoher Wren, the celebrated English architect who rebuilt the churches and public buildings of London after the Great Fire of 1666, lies buried in a simple grave in St. Paul's Cathedral, his masterwork. After his death, his admirers approached his son and asked what kind of monument they should build to commemorate his father's peerless legacy. His son scoffed at the notion of a monument, and instead installed a plaque on the wall in St. Paul's near his father's earthly remains, with a Latin inscription that says "Reader, if you seek his monument, look around you."

Today, we have only to look around us to see the monuments to the Copyright Act of 1976--the prospering copyright industries, a booming cable industry, marvelous new space-age technologies for bringing the genius of America's creators to their appreciative public, and a burgeoning export industry that envelopes the world. Faced with this overwhelming evidence of the great skill of Congress in drafting a balanced law, I don't want to sound churlish by haggling over a minor failure. But I worked as counsel to Senator Hugh Scott of Pennsylvania, on the Senate Subcommittee on Patents, Trademarks, and Copyrights at the tail end of the revision effort, and I am sure that Senator Scott would authorize me to take at least

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1/ This presentation is based on a speech given on April 23, 1987, at the meeting of the Library of Congress Network Advisory Committee.

one pot shot at the 1976 Act. Especially since that pot shot hits the subject of your seminar.

The battle royal that tied Congress in knots during revision --the copyright liability of the fledgling cable television industry--had made a tremendous impression on the legislators. The courts had wrestled with the issue for years, and in 1968 the U.S. Supreme Court chose not to expand the frontiers of copyright beyond the specific technologies enumerated in the 1909 Act as amended. Instead, it dumped the case back in Congress' lap.

> We have been invited ... to render a comprise decision ... that would ... accommodate various competing considerations of copyright, communications, and antitrust policy. We decline the invitation. That job is for Congress. (392 U.S. at 401)

With the Court's dictum and the cable controversy fresh in its mind, Congress tried to minimize the potential for future battles brought on by the advent of new technologies for exploiting copyrighted works. Congress knew institutionally it had difficulty dealing with these battles because of the great technical complexity of the issues. Senators and Representatives are generalists, and they have neither the time nor the inclination to get involved in the petti-fogging minutiae of regulation. To foreclose a reprise of that drama, and to delay as long as possible the need for another major revision, Congress made an innovative change in the law--it wrote a non-medium specific law and directed the courts to construe its mandate broadly. Unfortunately, on this score Congress failed.

Instead of giving copyright protection to specific works in specific media, as had all previous copyright laws, the 1976 Act incorporated only the two general touchstones of copyrightability: originality and fixation in a tangible form. Both terms had long and well-defined histories in 1976. Those histories were the children of some two centuries of copyright jurisprudence in this country, and the cousins of a somewhat longer line of cases in Great Britain.

By providing for copyright along generic lines, Congress attempted to signal bench, bar and the public alike that it would no longer be necessary to repair to Capitol Hill every time some new device or process entered the copyright marketplace.

The carefully chosen phrase "Original works of authorship" was intentionally left undefined so as to do no more than codify the judicially established standard of originality. Congress knew full well that "[a]uthors are continually finding new ways of expressing themselves" and did not wish to repeat its experience under previous acts when, for example, it had had to revise the law expressly to accommodate such new technological wonders as photographs, motion pictures, and sound recordings.

In the same way, the tangibility requirement was not new. It represented the attempt both to codify a whole string of judicial decisions and to avoid freezing copyright into technology that existed in 1976. To reach this second goal, the phrases "... now known or later developed, from which they can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device" were appended to the "tangible medium" criterion. Ideally, then, the Act of 1976 should have been a technology-independent medium-neutral model of a modern copyright law.

Just as Congress designed the originality and fixation requirements to be hospitable to new works in new media, it also intended the scope of rights established by the Act of 1976 to be broad and adaptable.

Two of the most important rights in the age of electronic communication are the performance and display rights. In construing the 1909 Act, the U.S. Supreme Court had twice held that a cable television system's retransmission of broadcast television signals to its subscribers did not amount to a "public performance" of the copyrighted works contained in the broadcasts.

Congress reacted in two ways: First, it greatly broadened the concept of "public performance" as to include "not only the initial rendition or showing, but also any further act by which that rendition or showing is transmitted or communicated to the public." It also removed the "for-profit" requirement, so that all public performances are now events covered by the copyright law.

Congress invented the display right in the 1976 Act. It covers such traditional displays as the exhibition of a painting or photograph and such "hi-tech" uses as the computer or laser disk display of a literary work.

So while Congress invented the display right and broadened the public performance right, it left the historic core of copyright --the rights to reproduce, adapt, and distribute copies of works-- largely untouched. As it has turned out, it is these areas in which courts have had difficulty implementing the congressional goal of having a copyright law that would adapt itself to new technologies and new marketing mechanisms without constant resort to the legislative process.

In the celebrated Betamax case the U.S. Supreme Court held that home taping of copyrighted television broadcasts for time-shifting purposes amounted to "fair use," notwithstanding that entire works were copied and that the cumulative effect was to erode a large potential market. The majority opinion says that "... it is not our job to apply laws that have not yet been written." What the Court failed to note was that the law had been written. It simply chose to ignore it. Justice Blackmun, in his dissent, makes the same point.

> "It is no answer, of course, to say and stress, as the Court does, this Court's "consistent deference to Congress" whenever "major technological innovations" appear. ... Perhaps a better and more accurate description is that the Court has tended to evade the hard issues when they arise in the area of copyright law. I see no reason for the Court to be particularly pleased with the tradition or to continue it. Indeed, it is fairly clear from the legislative history of the 1976 Act that Congress meant to change the old pattern and enact a statute that would cover new technologies, as well as old."

A law designed to permit copyright to protect new uses of traditional works in new media hardly amounts to an unwritten law. We find the intent of Congress not just in the legislative history; we find it in the law itself. The law in this case seems almost painfully clear: Section 106(1) gives the copyright owner the exclusive right to prepare or authorize the preparation of copies of his work, and sections 107(3) and (4) indicate very strongly that copying a work in its entirety, with the result that a potential market is constrained or foreclosed, is not fair use.

Still, the Court, left open the questions of the taping of cable-originated programming, of tape-to-tape "dubbing" of new copies from authorized copies, and of what is known in the trade as "librarying." But by holding as it did, it makes the likely results in such vases more unclear than had the Betamax case been decided in the copyright owners' favor. Having refused to apply the law in the expansive manner that some of its drafters might have envisioned, it is not unreasonable to predict that the Court would find a cable or dubbing or librarying case to be fair use, thus carving out a non-statutory exemption far larger than those created by Congress in the Fair Use sections.

Both the majority and the dissent noted that Congress could act to change the result, but so far the issue has been as dead as a doornail. And, besides, the filmmakers are profiting from the huge secondary home video market, and the incentive to copy has greatly subsided with cheap, convenient rental shops springing up on every street corner.

Maybe because the U.S. Supreme Court hasn't decided an audio home recording case, and because economic losses to the creator for audio home taping are more easily shown and are increasing, Congress has been a bit more willing to consider legislation that would compensate copyright owners for the wholesale unauthorized duplication of their works.

In the meantime, technology has overtaken the legislative process. The recording and electronics industries have developed machines that, thanks to the presence of the ubiquitous

semiconductor chip, can distinguish between recordings for which copyright owners have authorized copying (and, for which, presumably, they have charged a high price in the nature of a duplication license fee) and those for which they have not authorized duplication. And Congress now has before it bills mandating a technological fix. The Digital Audio Recorded Act of 1987 was the subject of a joint Senate and House hearing on April 2. This bill would require the incorporation of copy-code scanners into all Digital Audio Tape recorders. Copy-proof recordings would be encoded with a signal that would prohibit the copying. When the scanner senses the code, it turns the system off for 30 seconds. Obviously, a tape with a series of interruptions is worthless.

In my testimony I questioned the ultimate wisdom of this approach to the home taping problem. For one thing, the copy-code scanner does not understand fair use: it does not comprehend limited educational or library-based copying which everyone would otherwise agree was acceptable. Also, as a precedent, I wonder whether such an all-or-nothing approach to the right of the public to reproduce reasonable portions of works should be encouraged.

The Library of Congress Copyright Office has urged consideration of alternative proposals that would lead to a long-term solution which keeps the overall approach of our copyright law in tact: keep the technology free to grow and contribute to the well-being, enlightenment and entertainment of the people, but make it subject to the legitimate interest of the laboring author and the risk-taking entrepreneur.

If the manufacturers decided they couldn't let the United States market lie fallow and built in the copy-code circuitry, it's hard to say whether DAT hardware would sell with this cloud hanging over its future. And the sunset provision adds to the problem. Who wants to buy a recorder with a copy-code device if the Prohibition Era will end in three years? Better to wait and get a machine without the spoiler.

I raised these issues as a way of suggesting that maybe in the long term a royalty solution would be best for everyone, including the American consumer. They could be convinced to take a broader view of their own self-interest. They, too, suffer because of the many uncertainties I've mentioned. The copy-code notch may or may not degrade the sound. And the consumer can't buy prerecorded DAT cassettes. And, worst of all, because of the copyright uncertainties and anticipated political fallout, the Japanese Ministry of Trade jawboned the Japanese manufacturers and forced them to degrade the quality of the DAT recorder so they could answer the hard copyright questions. If a royalty system were in place, the American consumer could get the best DAT technology the human mind has been able to devise to far. Instead, by opposing a royalty, the American public will wind up with a recorder that forces pure digital signals through an unnecessary electronic

loop-the-loop--from digital to analog and back to digital--for international political purposes. It just doesn't make sense.

• Finally, let me turn to Henriette [Avram's] bread-and-butter, computers. We're here today because computers have created new copyright problems. The scope of protection for computer programs is up for grabs. The Whelan v. Jaslow case told us that the law protects structure, sequence and organization. Recently some courts have started to protect menu screens. And very recently (March 31st) a judge ruled that "the audivisual screen displays" are copyrightable separate and apart from the copyright in the computer program.

The automated database, which used to be the tool of a relatively few obscurantists in the sciences, has become a staple in the legal, medical, library, and journalistic professions. It is clearly a copyrightable work; the legislative history contains the statement "The term 'literary works' ... includes ... compilations of data [and] computer databases." But this does not answer the hard questions: how to register claims in databases, what to deposit, and how to accommodate the constantly changing nature of the database. The Copyright Office must deal with these questions when it responds to the demands of the creative public to adapt its procedures to encompass all forms of copyrighted works.

I've raised some of the concerns that touch on the larger question of the role of Congress in mediating economic controversies in which the public has a large stake. All of these concerns, taken together, suggest that at least one of the following propositions must be true:

> (1) Congress did not enact a technology-independent copyright law in 1976.
> (2) Congress did in fact enact such a law, but the courts are loath to apply it in an expansive, author-oriented manner.
> (3) It is impossible to enact a truly technology-independent copyright law.

There is probably some truth in all three. While the broad definitions contained in section 101, the broad scope of copyright in section 102, and the broad rights in section 106 do strive mightily for a technology-independent law, such details as the supremely complex cable provisions in section 111 are almost an invitation for confusion in the face of change. To the extent that the law is generic rather than technology-specific, the courts, have, on balance, done a less than perfect job of applying a fairly straightforward law--at least as regards the provision of clear rights--to new facts, such as those presented by home taping. Finally, to expect that any law--whether a copyright law, a communications law, or perhaps even the text code--can be independent of the state of technology at the time of its enactment is to expect too much.

Even if Congress had succeeded in enacting a non-medium specific law, it probably would not have accomplished its broader objctive--shielding itself from the clamoring of the people who lose. If the U.S. Supreme Court had ruled in favor of the copyright owner in the Betamax case, the VCR manufacturers would have rushed to Congress for relief (as in fact they did after the decision against them in the U.S. Court of Appeals). If the courts had ruled in favor of the copyright owners on the superstation retransmission issue, Ted Turner would have sailed in harm's way in the halls of Congress, guns blazing. And if the courts were to rule in favor of the coyright owners on the question of photocopying, and hold the Xerox Corporation liable as a contributory infringer, Congress, whether it liked it or not, would still find itself at the eye of the storm.

Moreover, if the courts followed Congress' mandate literally, a question could legitimately be raised about their ability to fashion comprehensive remedies in dealing with these arcane mixtures of law and policy that would work satisfactorily. Only Congress can tie it all together in a neat and consistant package. Not surprisingly, Justice Blackmun, that voice of reason, had the last word on the subject when he opined in his Betamax dissent that "[l]ike so many other problems created by the interaction of copyright law with a new technology, '[t]here can be no really satisfactory solution to the problem presented here, until Congress acts."

In a common law system, the balance between courts and legislatures is not sharpely defined but a matter of continuous development, and Congress will always be part of that process. The Copyright Act of 1976 represents a Congressional attempt to encourage courts, in the common law tradition, to take a leading role in affording copyright protection to new works in new markets. For the moment, at least, courts apparently are more comfortable in their traditional role as "gap-fillers" and arbiters of disputes about works and uses known to Congress in 1976. If this is to change, perhaps Congress will have to speak even more unequivocally about its desire that new works and new uses automatically be covered by the copyright law. Whether in doing so it will succeed in putting itself about the battle is another question.

CURRENT BIBLIOGRAPHIC DATABASE OWNERSHIP ISSUES AND THE PROTECTION OF NON-TRADITIONAL FORMATS—ONE USER'S POINT OF VIEW 1/

W. David Laird
University of Arizona Library

Mark Twain is reputed to have said: "Only one thing is impossible to God: to find any sense in any copyright law on the planet." Fortunately it is not my job to explain the copyright law. My assigned topic is "Current Bibliographic Database Ownership Issues." There is not much that is really new on this topic, and I plan to dispense with it first, then turn to some thoughts about copyright from the point of view of users of nontraditional formats. Before I tackle the two, let me make it clear that I do not much favor protectionism of any kind, whether it is protective tarrifs or laws protecting special interests. Viewed from one perspective, copyright laws are nothing more than the legalization of monopolies. It is heresy to say so, but I personally think it might be worth trying to have no copyright laws. Chaos? Maybe, but it may help you to understand some of my remarks if you remember this concept. If copyright is not considered a sacred cow, making appropriate changes in it will be easier, will come about more quickly, and will produce results that are in the long run more acceptable to more people.

In the following remarks I am not going to deal even summarily with the issue of who/what is the creator of a copyrightable product. If a computer program gives a computer the ability to write additional programs for itself in response to data input, is the creator of the new program the person who wrote the original program or, good grief, the computer that did the writing of the second program? If a computer program will allow a machine to create an abstract, is the creator of the program the copyright owner of the abstract? Who cares? Although it is another heresy to say so, most users of copyrightable materials don't.

1/ This presentation is based on a speech given on April 23, 1987, at the meeting of the Library of Congress Network Advisory Committee.

If the definition of what is copyrightable were left to me the result would be dramatically different from its current state. I believe, for example, that computer programs should not be copyrightable. Despite their use of letters and symbols that can be "read," they are not truly capable of human "decoding." Perhaps they should be patent protected, but I leave that question to someone else. I believe we could clean up many copyright problems of the near future by restricting the use of copyright to readable (i.e., decodable) publications, in whatever form, but definitely only those things that can be examined and interpreted by human readers.

To find out about the copyright of databases I interviewed by telephone some of the major players in the ongoing tug-of-war between the bibliographic utilities, the regional networks and individual libraries or other producers of bibliographic data. The results surprised me, but shouldn't have. While there has been some "movement," the position of most of the stakeholders has not changed. More than four years after the issue arose, there is just one contract signed between the OCLC Online Computer Library Center, Inc. and a major network. One network director was skeptical that more contracts would be signed within the forseeable future, while one major network is about to launch into another round of contract negotiations with a new strategy, which I will describe in a moment.

A major change in OCLC's position has developed. Where it once seemed inflexible on the use by individual libraries of their own records when sharing with non-members and commercial enterprises, it now accepts the idea that individual libraries have the right to do whatever they wish with their records so long as the use is not in direct competition with OCLC services. Two years ago this was one of several points of dispute between OCLC and the networks. Some stakeholders now say that the only significant difference remaining between OCLC and the networks is the issue of what uses the networks may make of records of the holdings of network members.

Sometime in the last two years OCLC stopped saying that the networks could not use the OCLC database to produce new products and started asking that the networks provide a list of the uses the networks might make of the database. The networks "refused" on the grounds that predicting future possible uses is impossible and that to produce a list might exclude the networks from some future use that would be essential to their survival.

As I mentioned, one major network may soon take a different approach to this problem. The strategy being considered is that the network will respond to the OCLC demand by producing a complete laundry list of possible uses. It will then ask OCLC to state specifically which uses will be permitted and which will not. If the network-use issue is the only major area of disagreement, the network believes that with a list of uses marked as "permitted" and "not-permitted," the network then can devise a contract that will have a disclaimer clause. The clause will simply state that on the

list of "not-permitted" uses the two parties have agreed to disagree and that the two parties will deal with each use separately at the time any "use" on the list is proposed. Several knowledgeable individuals indicated a belief this might lead to a contract, but obviously it leaves the question of who owns the copyright still unresolved.

The dispute between the networks and OCLC is made more confusing by the fact that some network members have never supported the networks' position, and some large libraries are individually negotiating with OCLC over their uses of the database. Many have in fact signed contracts. Typically such libraries are simply defending long-standing practices and agreements so that they can continue to cooperate with other libraries or continue to "publish" series and offer other bibliographic services that are not, and never have been, free.

Philosophically these large libraries, and the regional networks, adopt the stance that creative uses of the database should be encouraged, not discouraged. Some of the libraries take the position that the issue is not even debatable since their records, whether in OCLC or some other database, derive most of their value from the fact that they represent a specific collection, not from some artificial electronic stroking of the data.

I need not belabor the point, but among the interesting examples I encountered in my phone conversations was an entrepreneur in Michigan who, among a certain group of law libraries not in OCLC, has begun to offer libraries an array of services based on their individual and combined bibliographic data. Included in these services are: (1) collection development for individual institutions; (2) cooperative collection development; (3) comparative analysis of subfields; (4) checking quality of selectors; (5) checking profile of approval plans; and (6) checking quality of approval plan vendors. These kinds of services could not be offered by networks or even individual libraries in an environment where one entity controls all the data.

Despite members who do not support the networks' position, and members who have and are negotiating with OCLC individually, the network directors seem to feel that they have the collective support of the memberships and that if necessary they can move to an actual legal proceeding to protect the rights of the networks. Some library directors said two years ago that they would not support the use of their money by their network to pay lawyers in a court proceeding over ownership of copyright of the database. Many library directors seem to feel that no courtroom battle is likely because OCLC would not dare to "pull the plug" on a network for fear of a backlash in the library community. Practically speaking this suggests a lengthy session of jungle warfare in which economics will be only one, albeit the major, factor.

Although the title of David Peyton's recent article is, "A New View of Copyright" (Journal of Policy Analysis and Management, v.6, n.1, pp. 92-7), his conclusion is,

> "Advancing technology has called into serious question whether copyright can work as well in the future as in the past. Maybe it can't. But the high economic and social stakes involved, copyright's historical successes, and the lack of palatable alternatives indicate there is no serious alternative except to try."

In other words, I interpret, Mr. Peyton is not sanguine that the next round of copyright discussions is likely to be much more successful than the ones that preceded the 1976 law. I agree completely.

Although I was not asked to predict the future of the copyright of bibliographic databases, I have decided to do so; Daring Dave of the Desert. Except for abolishing all copyright laws, there is and will be no simple solution to our copyright dilemma. The introduction of super-macros over the next ten years or so will dramatically change the nature of OCLC and the other utilities. It seems likely that a legal resolution of the issues between OCLC and the networks will never come about. OCLC probably cannot afford the bad publicity of pulling the plug on a large network. The large networks probably cannot afford the internal dissension and economic upheaval of alienating those library members who do not support their copyright battle. In the larger arena, copyright legislation itself is going to change significantly.

As one tiny piece of the user perspective on copyright I conducted a mini-survey of sixty professional librarians asking them whether they have access to a microcomputer and use one regularly, and if so, whether they own and/or use pirated software. Ditto for a video cassette recorder. Naturally the survey was anonymous, and the results were only surprising to me in that fewer people are violating copyright than I expected. Fifty-two persons responded. Following are the questions I asked and a tabulation of the responses:

1) Do you regularly use a microcomputer or other word processor?
   Yes: 46 No: 6
2) If yes, do you see other software besides word processing?
   Yes: 27 No: 19
3) Do you have copies of any software in "pirated" versions?
   Yes: 22 No: 28
   Word processing? Yes: 19 No: 9
   Spread sheets? Yes: 10 No: 16

Games: Yes: 7 No: 14

4) Do you regularly use a video cassette player?
Yes: 28 No: 23

5) If yes, do you own cassettes?
Yes: 26 No: 2

6) If yes:
Are any of your cassettes "pirated" by copying other (copyrighted) cassettes?
Yes: 9 No: 7
Are any of your cassettes "pirated" by copying copyrighted programs?
Yes: 16 No: 10

As you can see, forty-six of fifty-two have regular access to a micro and twenty-two of them, or 48%, use pirated software.

Trying to get a sense of whether users of pirated software are similarly using pirated video, I included questions four through six. My manual tabulation suggests that all of the nine who admit to using pirated video are included in the twenty-two who are using pirated software. But the proportion of copyright violators is smaller; only 35% of those who own cassettes own pirated ones. I found it interesting that only one of the nine who admit to using pirated video noted that it was his/her understanding that taping off the air was not illegal. Two interpretations we could place on these numbers:

1) There seems to be a fairly high disregard for the concept of copyright as applied to software and video cassettes;
or
2) These numbers do not represent the general public, it is just that librarians are unethical scofflaws.

My reason for bringing these results to you is to lead into a brief consideration of copyright as a pragmatic rather than ethical or philosophical issue. To begin that consideration I want to remind you of a historical event. The election of a Republican U.S. government in 1900 was followed by a series of rulings by the U.S. Supreme Court that supported the general idea that the U.S. Constitution did not automatically become the law of conquered and ceeded territories; that is, "the Constitution does not follow the Flag."

I think most historians who have considered the issue suggest this "decision" (actually a series of complex split decisions) was clearly political, not philosophical. This issue was important economically because some of the territories ceeded from Spain (Cuba, for example), produced substantial amounts of revenue for the federal government through tariffs and other import/export duties. The U.S. Supreme Courts rulings supported, through tortuous logic, the prevailing sentiment of the public and the newly elected

Republican government. Finley Peter Dunne's Mr. Dooley, explaining all this to his friend Mr. Hennessy, concluded there was one thing he was certain of:

> "(That) no matter whether th' Constitution follows th' flag or not, the' Supreme Coort follows the' iliction returns."

Is copyright legislation similarly maleable? Obviously on at least one level it is; whole sections in the 1976 law were written in direct response to pressure from "the public," although in this case the public being referred to was a group of special interests. I believe the levels of "pirating" suggested by my mini-survey will ultimately force changes in legislation swinging heavily toward open use by individuals and away from protection of creators' rights. That being the case, THIS user's view of the copyright of nontraditional materials is that we must search for a new basis upon which to ground our copyright laws; a basis which will reflect actual needs of the society.

Fortunately there already exists in social theory a concept that can serve as the needed basis. It is called "distributive justice" and a substantial literature has been created to support and analyze its concepts. Distributive justice is normally applied to allocations and distributions, but I believe it can be successfully adapted as a guiding principle for copyright protections. After all the application of copyright policy is a form of distribution; it simply establishes the distribution of rights rather than money or other more tangible resources.

The theory of distributive justice generally rests on four principles: need, merit, effort (or contribution) and equality (or balance). Generally contrasted with these four distributive concepts are two other principles: efficiency and personal preference. The guiding philosophy of distributive justice is that "fairness" is the perception sought in the distribution process, because unfairness and lack of equity lead to emotional extremes on the part of the players involved. Why this is so in copyright should be obvious: the issues are extremely complex and few if any people can fully comprehend all the ramifications when applied universally to a world of "products" which have less and less in common.

Although I cannot prove it, I would wager that the people in my survey who are violating copyright believe that the restrictions currently in place are unfair. Asked to reflect on the principles of distributive justice they would note that their personal need is great and the system in place is demonstrably inequitable. They know that the actual cost of producing a floppy disk with a word processing system on it is only a few cents but the copyright owner is charging hundreds of dollars for it. Pressed to talk about the effort (or contribution) of the copyright holder they would

acknowledge some reward should be included, but it is doubtful that many nonspecialists could accept the current high cost of software as fair.

If individuals can see that equity is built into the process of distribution, they will be inclined to accept the decisions the process creates. It is not necessary that they understand all the details, only that they believe in its fairness.

It is not possible for me to develop this theme fully, but let me touch on two ways in which the principles of distributive justice might come into play in producing our next copyright legislation.

A lawyer friend, not an expert on copyright, has suggested that copyright protection laws could be changed to stipulate that where there is no actual loss there is no crime. Such a law could permit an individual or a family to make one copy of anything for personal use; the same as was true under the old law for the copying of printed materials. This principle would make the kind of household copying that is now common a legal activity. Obviously this would reduce the traditional protections copyright affords to publishers and authors. Considering the litigious age in which we live, such a change would probably also increase fees paid to lawyers since most infringement cases would be made highly debatable on the issue of proving actual loss.

On the other hand, most users would probably agree that it would be fair to have different rules apply to corporate entities and other groups (even libraries). I find that in discussing copyright with most people they imply that what is wrong with the law is its attempt to cover too much under a single heading. This suggests that an improvement to be made in future legislation would be to have different laws for different kinds of materials. The vast majority of users don't care about consistency. Why couldn't we have different rules apply to the three major categories of materials: (1) works of imagination; (2) works that convey factual information; and (3) works that perform a function (e.g., computer programs)?

Copyright for works of imagination, for example, might be treated the way movie syndicates treat allocations of first-run movies to theaters; copyright could be stringent for, say, the first two years, then more relaxed but still enforced for an additional period of time, then wide open.

My mini-survey asked about video, and before I conclude let me pursue one aspect of the uses and abuses of video. I mentioned earlier Mark Twain's thought about copyright laws. He might also have said of the 1976 Copyright Act that anyone who hasn't violated it either hasn't done much research or teaching, or already has a guaranteed place in heaven. Since academicians and educators are

notoriously independent, I would speculate that virtually everyone in the education community who is a heavy user of non-print materials has already violated the law many times over, and it is easy to understand why.

The educational use of video tapes of commercial broadcasts is restricted by nine major provisions of the 1976 Act. None of the restrictions are likely to have the support of a majority of educators, but one of them stands out as the epitome of impractical nonsense. By this provision educators, who have specifically been given the right to tape off the air and use such tapes twice are also specifically forbidden to physically or electronically alter or combine each recording with others to form an anthology. The "teacher in the street," man or woman, must consider such a restriction to be not only nonsensical but totally impractical and unenforceable.

Imagine with me how a teacher goes about using a video recording. The teacher is not required to use the entire program, and most teachers, if they can, will choose to eliminate, at the very least, the commercials. But it is also true that the classroom time available to a teacher for a given topic is very limited and results is some attempts to edit virtually any commercial broadcast into the minimum length that will convey the needed information. Also, commonly, the teacher's approach to a given topic is multivariate. He or she does not want to give only, let's say, Jacque Cousteau's perspective on whales, but also knows of a video available in the school library that discusses whale language. If the number of such sequences reaches more than three or four, I have no doubt that the teacher will create on one tape an anthonlogy in direct violation of the copyright law.

Furthermore, if confronted with a question of this violation, the teacher will point out that since one of the basic rules of the video portion of the 1976 Act is that copies of commercial broadcasts can only be kept for forty-five days, he or she is doing no harm in combining several tape segments into one tape which will then be erased. In fact the arguments for such a restriction are, in so far as I can determine, fatuous. The real purpose, I believe, is to discourage teachers from using video tapes of commercial programs or, at the very least to discourage them from removing the commercials. I do not doubt that lawyers for CBS, NBC, and ABC would viguoruosly dispute this assertion.

If the previously mentioned restrictions on the use of commercial video for educational purposes is absurd, think about this: the classroom use of noncommercial video, taped off the air, is even more restrictive than for commercial programs. The major absurdity is that noncommercial programs must be erased within seven days of their copying. For commercial programs the time period is forty-five days. Can we seriously believe that the grade school classroom teacher or librarian is going to follow two different time

schedules for erasing tapes (assuming willingness to follow the law and actually erase). If you can, your imagination is better than mine.

The current law is not working as it applies to nontraditional media, but my conclusion to all these thoughts is that finding a copyright law that will actually work for both print and non-print materials and be satisfactory to a large majority of the stake holders probably is not possible. Laws that are not working should be repealed. The Volsted Act which forbade the manufacture, transportation, and sale of alcoholic beverages was such a law. Places that violated the law were called speakeasies. Places that violate the current copyright law, as applied to video materials and computer programs, are called libraries, learning resource centers, or family rooms. Unless we can find a way to write a copyright law that adheres to the principles of distributive justice, we will be better off to return the application of copyright to the print and near print materials for which it worked fairly well and let protection of nontraditional materials fall under contract law or some other form of regulation.

ACS CHEMICAL JOURNALS ONLINE: IS IT BEING DOWNLOADED, DO WE CARE? 1/

John A. Hearty and Barbara F. Polansky
American Chemical Society

Presentation by John Hearty 2/

Barbara Polansky came into my office one day while I sat at my terminal probably downloading someone's information and spreading the information to the entire department--to ask me some questions. First she told me that she had been invited to speak to the members of the Library of Congress Network Advisory Committee about electronic information issues concerning the property rights of the American Chemical Society's databases. She wanted to know what people were doing with our databases, were they downloading, and if so, what is ACS doing about such violations. She was surprised that I did not know the answers to her questions and that I showed little concern about copyright violations. This is, in a nutshell, the difference between our departments; I represent the marketing point of view and Barbara the copyright point of view. Therefore, you will see two different perspectives of issues concerning property rights in our presentations.

Let me start with some background information and establish some basic assumptions. Three primary groups are involved in electronic delivery of information. (1) **Database vendors** are individuals or companies that sell information electronically or provide computer facilities (timesharing) to sell their information electronically. (2) **Database owners**--sometimes suppliers or producers--are individuals or companies in the electronic industry

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1/ Both presentations are base on speeches presented on April 23, 1987, at the meeting of the Library of Congress Network Advisory Committee.

2/ The opinions expresses herein are the author's and are not to be construed as official statements of the American Chemical Society.

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who attempt to sell their information. As a general rule, they use someone else as a go-between. And (3) **database users** are individuals or companies who use the electronic information to meet their needs. I shall focus on groups one and two: database vendors and database owners.

ACS is both a database vendor and a database owner. As a database vendor, ACS has entered into a cooperative telecommunications network agreement with the Fachinformationszentrum Energie, Physik, Mathematik GmbH, Fitz Karlsruhe in West Germany and the Japanese Association of International Chemical Information in Japan. This telecommunication network is called STN International. Each group has established a node and users can access those nodes and the database stored in each node from anywhere in the world. All nodes are linked together by a dedicated telecommunications line. Our node is located in Columbus, Ohio, at the ACS division of Chemical Abstracts Service. The ACS Washington operation is also a database vendor. We are responsible for Chemical Journals Online, a family of full text chemical databases. We have negotiated with a number of publishers and database owners to mount their journals on STN International under CJO.

Let me first define the term "downloading". Technically speaking, a user has three options regarding the information while online. First, he can print that information; second, he can view it on the screen; and third he can save the information. This is called downloading. The first two options are becoming more prohibitive due to high costs and the baud rate capability.

Choosing the **first option**, the user can ask for offline prints of what he has selected on the monitor. Most database vendors will provide printouts within a very short time, in some cases within twenty-four hours. However, these printouts are expensive. Three years ago, the industrial standard for baud rates was 300 bits or signals per second, commonly called baud. There were only a few end users who had 1,200 baud modems, which cost about $600 to $700. The industrial standard now is 1,200 baud and we are seeing more 2400 baud users. 4,800 and 9,600 baud are already in use and it will not long before 4,800 or 9,600 baud become a standard. Given those facts it becomes almost impossible for the user to be able to use the **second option** unless he is a rapid reader or can afford to pay the baud rates. The alternative to a printout or to viewing the information is the **third option:** to save the needed information that was called up on the user's screen in some type of storage device. This is called downloading.

Downloading then is simply the process of capturing information in a computer machine-readable form. The highest percentage of online users choose the third option. They query and download the required information. Given that fact, let us talk about the database vendors' concerns and how they protect themselves against copyright violators.

The first concern of a database vendor is to sell information. Nothing is more important to him than to sell his information, because if he does not sell, he will not make money and may go out of business. The second concern is to keep the database user happy. Customer support provides technical materials, workshops, etc., and will keep the customer interested in the database vendor's product. The third concern, also very important, is product development. This occupies a significant amount of staff time. Database vendors are very competitive. Vendors constantly need to bring up new files. Vendors also need to update their software and improve search and display capabilities. The first three are the most important concerns of a database vendor. The fourth concern, copyright violation, is generally not seen as a major concern, at least not from the marketing point of view of a database vendor.

I have divided the fourth concern into three different areas. (1) A database vendor downloads information and resells that information electronically, perhaps even hard copies of that information. This is a major copyright violation. (2) A user comes online and downloads information and merges it to other downloaded information he might have extracted from another database. He merges two products, or parts of two products into a new, value-added product. That user, who is a database vendor, resells it as a new product. There is not much that can be done about this. (3) The third concern involves minor copyright violations. Someone downloads information from our system to make it available to a number of people, perhaps even in two or three different locations.

How do we protect ourselves? A database vendor can analyze the frequency and length of online use of a given database. We get a plethora of reports every month. We get a report on every single person with an account. We know how many times they have entered our system, when and for how long they stayed on our system. We also know how many off line requests they have made, how many online hits, and what was requested online. Due to our numerous statistics, we are able to analyze all types of database behavior. For instance, two years ago, an online vendor of another database owner noticed someone who came online at three o'clock every morning and spent only seconds on each search, which indicated that the search had been prepared in advance. The user downloaded just about the same amount of information each night and immediately signed off. This continued for about two months. The vendor became curious and looked into the situation and found that the user had developed a program for his computer which would automatically call up the vendor's computer and run a particular query (prepared the day before) and then download that information. The information was made available to the user's company and resold. The vendor caught them. ACS also has the capability to find out what the competition is doing. We keep constant track of the marketplace and analyze its changes. A number of our users also let us know what is going on. Online meetings inform us. Sooner or later we know when someone resells our information.

STN International has user agreements. Basically, every database vendor has a user agreement--a contract signed between the user and the vendor spelling out in detail what they can and cannot do. I shall go into this later. We know that most of the violations of the copyright law are in-house violations. We have provided a legal alternative to the users. By paying a higher royalty they can do what they want with the information as long as it is in-house. This seems to make sense. Our customers' alternative is to break the law. We would then have to cut our service to them.

As a database owner, ACS electronically publishes the eighteen primary journals of the American Chemical Society under CJO. It is my responsibility to market this file. A database owner's primary concern is to make money or at least not lose money.

Another concern of a database owner is the protection of its name and logo. In most cases, publishers are more concerned with the protection and use of name and logo in the marketing of their product than they are with what is done with the data itself. The protection of name and logo is very critical to publishers. Publishers usually want to see everything that has their name and logo on it. They also want to make sure that the quality of the electronic version of their publication is high. They do not want users to point to mistakes, omissions, or erroneous fields.

Database owners are also concerned that subscriptions to the original (the hardcopy) are not influenced by the availability of an electronic database. After all, publishers make their money, by and large, from the original printed form. They do not make it, at least not at this time, from the electronic distribution of their information. Therefore, database owners are very concerned about these issues. Because electronic delivery of information is new and somewhat technical, database owners have not been overly concerned with minor copyright violations. Database owners tend to think that electronic copyright violations are equal to the misuse of photostat machines.

In terms of protection, the database owner is protected by his contract with the database vendor. He is also protected by the vendor's contract or user agreement with the database user. In both cases, vendors allow the database owner to add to or amend the user agreement. I shall cite some specific examples of how vendors have done that. Database owners have the ability to (at least with STN International and ACS) cut off a particular user if he is found in violation of copyright. A database owner who keeps his "ear to the marketplace" will find out if and when major violations occur. At that time, the user who violated the contract can be cut off from that particular database. The database owner can pull his file off the vendor's system as an alternative way to protect himself. Those are the two ways in which a database owner can protect himself against violations of copyright.

Let me only briefly address contracts and license agreements, because I think Barbara will also spend some time on this subject. I want to be sure you understand the difference between my belief and hers. The database vendor/database owner contracts tend to run the gamut from total timesharing to royalty payments for connect hour. First, the total timesharing contract involves a database owner who will go to someone with a computer system and a telecommunications network; pay storage costs; put his database up; and then do his own marketing of the database. The risk is entirely on the shoulders of the database owner. If the database does not sell, the vendor or timesharing institution assumes no risk at all. Second, the shared risk contract involves an existing private file. For instance, ACS had entered into a contract with the Bibliographic Retrieval System before our database of the journals was brought over to STN International. BRS had ACS' nineteen primary journals under contract on their system. ACS was a private owner that time-shared. ACS paid storage costs; connect hour charges; and was allowed to set its own prices. In return, ACS received from BRS very detailed information on usage and users. Third, the highest percentage of database owners place their databases in private files with royalty agreements, whereby a database vendor will come in to (1) take a file that looks particularly interesting; (2) put it up on his [the vendor's] system; (3) take total responsibility for it; and (4) pay the database owner a royalty charge for connect hour usage. This arrangement causes the loss of a fair amount of control over the database for the database owner. It also attracts copyright violations because the owner will not necessarily receive detailed reports under this agreement. The database owner receives a report on total connect hours, usage, and perhaps a few other facts. If an agreement can be reached beforehand, it should be very specific about these situations. On the one hand, database owners trade away the risk factors, but on the other hand, they trade away a lot of their own ability to protect themselves.

User agreements also run the entire gamut. In some cases, vendors and owners know that the database will be violated and consequently do not prohibit downloading, but are very clear on prohibiting reselling. In other cases, there are files that are so restricted they beg be violated. This particular user agreement states that the user can come in and download the information, but he has to delete the electronic download within three days. The user is allowed to keep a paper version for a month only. A database with that many restrictions offers a greater chance for copyright violation than a less restricted one.

Vendors and owners recognize that they have little control over minor copyright violations as long as they occur in house. ACS tries to give people the option of acting honest with a downloading agreement as an alternative to acting illegally. Interestingly enough, corporations pay the royalty rather than take a chance on being caught in violation of the law. So it is a good alternative.

In answer to the question, "do we really care," Barbara, yes and no. I guess I care, but I am not really willing to spend the time enforcing minor copyright violations.

Presentation by Barbara F. Polansky 3/

Before I begin my presentation and also my comments on John's statement on "do we care about downloading?" I would like to let you know that, in the copyright sense, I am "fixing" my talk. In other words, I am making a sound recording of my speech so that it can be retrieved again. Because this talk is being "fixed" and because I am giving it within the scope of my employment, the American Chemical Society owns copyright. If anybody is taping my talk, your tape may be used only for your own personal use; you may not share it with anyone else unless you obtain permission from the copyright owner.

Is ACS Chemical Journals Online being downloaded? Yes it is. The American Chemical Society grants downloading rights by contract so that people may download legally. Do we care? Yes we do. My primary concern is copyright, while John's is marketing. He wants his products used; he wants people to download and to use our information. Earlier, John told you that individual users and the marketplace let him known when people are downloading, when they are turning around information, and when they are reselling it. Database users inform us when others make illegal copies; they feel that if they are paying for the right to copy, then their colleagues who are copying illegally should also have to pay for that right. Every now and then, I get calls from university professors or corporate librarians who tell me about people who make copies without permission.

Are we doing anything about it? Yes we are. Publishers are banding together. I am sure you have heard about the Texaco lawsuit. Texaco was sued by a group of publishers for allegedly making copies in house without paying appropriate royalty fees to publishers. ACS has sued a party for copyright infringement. We do care and take action.

3/ The views expressed in this paper are not necessarily those of the American Chemical Society, and definitely not those of Mr. Hearty. Also, I am not an attorney, so any suggestions made are not to be taken as legal advice.

Copyright (c) 1987 American Chemical Society.

Who exactly are the "we" in the question, "do we care..." Copyright people care. And as you heard earlier, John cares. Of course, copyright concerns are low on his priority list, but they are concerns nonetheless. Of course, what is lowest on his priority list--rights to download and make hard copies to distribute within an organization--is high on my list of concerns.

If copies are made for distribution in house, royalty fees should be paid to us either directly or through our Copyright Clearance Center. You might be surprised at the number of employees who let us know that they have been told to make copies but they do not feel it is right. For the most part, people are honest about reporting their copying activity. Of course, there are some dishonest people. But I am pleased to report that it is the librarians who call me and inform me that they have been instructed to make multiple copies without obtaining permission or paying royalty fee.

I handle copyright for the printed publications of the ACS Books and Journals Division. The ACS's Research and Development Department created the database, Full Text Journals Online. When the experimental database was offered to the public, the primary concern of the Marketing Department was to get clients to use the database. In other words, they wanted users to use, or download the information.

When I first discovered that users were granted (by contract) the rights to reformat and download online text for which I administered our copyright policies for the printed publications, I was wary of what those contracts had to say. I was also wary of users signing our contract and then downloading without regard to the contract.

If you have a system that has the capability to download full-text from a remote system into your personal computer, you are not going to think about copyright. Most people will just go ahead and use their systems. I do not believe we can rely solely on copyright to protect works that are in electronic form. We must use contracts. This means that we have to have a lawyer involved. So the "we" in "do we care..." now includes the Legal Department, the Copyright and Permissions Office, the Books and Journals Division director's office, and the Marketing Department.

Once we have a contract in place, everyone should be happy because the contract spells out our fees for downloading and what users may and may not do with the information. But who monitors the downloading that is authorized in the contract? Who is in charge of getting the plethora of reports? The Marketing Department. And, of course, marketing people are thrilled that users are using the new product.

As John mentioned earlier, it is possible to detect when a

user is downloading. You can detect downloading from the marketplace; from the time that a user is online; how often a user is online; and from the type of information that is being requested.

Most people download short pieces of information to reformat. For a database owner, that is both good and bad news. Users retrieve the information once but use it over and over again. They can reformat the information in their own personal system and pay only once for the use of that information. The database owner is not receiving due recompense for subsequent usage. This means that there is a potential loss of revenue. If the economies of scale go down, the database may cease to exist. If this happens, everyone loses.

The benefit of allowing people to download is that they can manipulate the information in their own offices or homes without paying connect charges. When users feel more comfortable with searching information online, they want to use the system more frequently and that is exactly what the marketing people want.

Contracts exist so that users know what they may and may not do with the information. In addition, database owners do not want users to download for an indefinite period of time without paying for this right. But for now, some copyright owners want users to feel comfortable with the online environment.

How do we solve the problem of letting users have access to online information (dare I say downlaod) while protecting the copyright owners interests? I mentioned contracts earlier. In order to have contracts, we need to communicate. We have to talk to each other: this is what I want to do, this is what you may do, this is how much it will cost, etc. We have to educate each other about what is really going on. Some organizations are facilitating this by holding meetings.

I would like to tell you about the spring 1987 open session of the ACS Copyright Committee meeting, which was held on April 6, in Denver, Colorado. I believe that a summary of the special session on downloading would be of interest to you.

As staff liaison to this committee, I assisted in selecting the speakers. In my conversation with the speakers, I was quite excited that those selected--a database vendor, an editor of a numeric database, and a manager of an information center--held divergent viewpoints. But at the meeting, I was disappointed to hear that they basically all agreed with each other: users can freely download, unless such use is for purely commercial purposes. The reason all three speakers agreed is that the database owner/-vendor, the person whom I originally invited, could not attend the meeting. Guess who was sent in his place, the vice president of marketing. And of course the marketing person wants users to use the system.

I was glad that there were some copyright conscious people in the audience. These included chemical librarians, both from the university sector and from the corporate sector. A few commented that they were bound by contracts and could not freely download.

I shall now briefly address what each speaker said about downloading. The database vendor stated that most people are honest. If users are interested in a database, they will download a fair-use amount; if people like the service, they will use it over and over again. That is a good sign because they will continue to use the service and pay the connect charges. Basically he said that he was not concerned with the copyright aspects of downloading. He looked at the product that he had to market.

The database vendor also said that his company has a contract stating that users could download a specified amount of information depending on who requested the information; he outlined a few specific cases. If the company would lose revenue from users not going online and staying online, the user would be charged a fee for downloading. If the database vendor's company feels that it is in their and the user's best interest to gain experience and information (such as having a school download for teaching purposes), then there would be no fee.

The second speaker was the editor of a numeric database and voiced his concern about the downloading of information because copyright does not protect facts and data. Copyright protects the collection of data. If users are going to download information from a numeric database, it would be difficult to determine the particular source they used because they could download from the particular numeric database and/or from another fact-based database. Users could then put all their collected facts together and create a new product.

However, the second speaker then commented that he really did not care if people downloaded a modest amount of information from the numeric database. Users will not download large amounts of numeric information because it would be more economical for them to license directly from the database owner. As the editor of a numeric database his foremost concern is the accuracy of the material being downloaded. It is possible to download inaccurate information if the telephone connection is not good.

The last speaker in the open session on downloading was a manager of an information center. He did not have any objection to users downloading small amounts of information for reformatting purposes. He said that he has been downloading ever since he was a young student. He described how he would take a packet of 3x5 cards with him to a library and copy from various sources. If, over time, he had kept those packets of cards and put them in a huge filing cabinet, he would have downloaded information from the printed source to his 3x5 cards. He questioned the difference between his

access to information in electronic form versus on 3x5 cards. He also commented that users cannot download a large amount of information from a database because the cost of computer storage space is prohibitive.

Perhaps this is true at the moment, but technology is advancing so rapidly that users might be able to download entire databases in the near future. Years ago, the first computer was the size of a room and calculators were the size of lecterns. Now, solar-powered calculators are the size of credit cards. And look at computers: they are small, light, and portable. So when someone tells me that they do not have the computer storage space to download a full database, I do not believe that this situation will remain that way for long. Copyright people observe these developments very closely.

Users still feel that once they pay for something, they ought to be able to keep it. Once they connect to an online database, they believe that because they pay for the searching, for the connect charges, and for the hits, they should be able to keep the information in electronic form.

What is the difference between making a photocopy of printed information and filing it versus searching information online and pulling that online record into one's own electronic file? There does not seem to be much difference, except one of the exclusive rights of a copyright owner is to make copies. The copyright owner has a copy of a photocopy that he has used to further his business; did he pay for that photocopy? Hopefully he did. Hopefully he paid royalty fees for the right to copy in electronic form. Copyright owners are also concerned with the making of copies and the compensation for the reuse of copyrighted material. Users want access and owners want compensation. I really do not think that copyright is enough to protect the rights of owners while meeting the needs of users--not in the online age that we are in, that allows us to reproduce and repackage information with great ease.

The delicate balance of meeting the rights of owners with the needs of users will be upset every time a newer and faster technology is created. And with the advancement of technology, the use, reuse, and repackaging of information becomes even easier, faster, and cheaper. This is both very exciting and also frightening.

How do we meet the needs of users while protecting the rights of owners? We must have contracts. Most database vendors have contracts. The problem that database producers/vendors face is that sometime contracts to download are entered into by an acquisitions office or by an administrative department. Passwords are obtained with the understanding that the terms of the contract will be met. However, most individuals within an organization rarely see those contracts. Once people received a password, they

simply use the system without worrying about terms specified in user contracts.

It is important for organizations to communicate the terms of such contracts to their staff so that they know what may or may not be done with online information. For instance, if an employee does something outside the terms of the contract, he might not only infringe copyright, but also infringe contract law. If an organization has a contract with a database producer/vendor to do specific downloading, repackaging, or reuse of information, every user in that organization should know what may or may not be done.

At the ACS open meeting on copyright in Denver, a woman in the audience commented that she really cares about copyright; she is afraid to do anything because she does not want to get into trouble. She pleaded for database producers/vendors to give guidelines to users. It was clear to me that perhaps she had the right to use information in a particular way, but that she was not sure because she had not seen the original contract.

The message was clear: users want guidelines. Earlier, Linda Garcia (U.S. Congressional Office of Technology Assessment) said that people want to be told what to do; they would not object to paying royalty fees if they knew the fees in advance. Robert Kost (OTA) said that the public is, by and large, unaware of copyright. I agree with Mr. Kost's statement, but think that the general public does not care about copyright as much as copyright people do. However, being unaware of copyright should not prevent users from paying close attention to signed contracts.

Innocent infringement is not a defense. We must be careful to learn what we may and may not do within the terms of agreements. And we must communicate with each other. Users must communicate to database vendors or to database owners what they want to do with the downloaded information. On the other hand, database owners should communicate to the users what may be done with the information. Copyright people should communicate with marketing people and the Legal Department should communicate with the marketing and copyright people to find out what is done and the types of permissions that have been requested.

Keep in mind that database owners are human. If your contract prohibits you from using online information in a certain way, write to the copyright owners. Exceptions to rules are made, so do not be afraid to write for permission.

David Laird (University of Arizona Library) commented earlier that the copyright law should be discarded and that legislators should start over. I believe that the copyright law we have today is the best thing we have going for us because the rights of owners are balance with the needs of users. However, what we need are guidelines to help us cope with the grey areas of the law.

People want to know what they can and cannot do.

With regard to changes to the copyright law, I agree with Michael Remington (Chief Counsel, House Judiciary Subcommittee on Courts, Civil Liberties, and the Administration of Justice) that the U.S. Congress will probably handle the grey areas issue by issue. Look at what happened with microcomputer chips--a new chapter was added to the copyright law.

What are the alternatives to amending the copyright law? Perhaps we shall have compulsory licensing, where people would be expected to pay for every copy that they make. Compulsory licensing has already been instituted in fourteen countries. If we--users, owners, the library community, the academic community, etc.--cannot reach agreements or create guidelines for acceptable copying, our government might have to take other measures. I hope not. I like the copyright law. I believe we can all agree with each other, or perhaps we can agree to disagree, but we can only do this if we communicate with each other and educate ourselves. Meetings such as this are a beginning.

SUMMARY OF BUSINESS SESSIONS

The business sessions of the April 1987 Library of Congress Network Advisory Committee meeting were held at the beginning and at the end of the meeting's program session. The following summary combines the two into one report.

New Members

Henriette D. Avram, chairman of NAC, opened the April meeting by welcoming all attendees and extended a special welcome to the organizations which were accepted as new NAC members at the December 1986 NAC meeting. Mrs. Avram pointed out that the American Association of Law Libraries has had a long and active relationship with NAC as an observer at the meetings. Avram expressed her satisfaction that AALL has finally become a member. **Robert L. Oakley**, director of the Georgetown University Law Center Library, who attended the previous NAC meeting as an invited guest, will represent AALL in the future. The next new member, the Society of American Archivists, will be represented by **Max J. Evans**, director of the Utah State Historical Society. However, Mr. Evans was unable to attend the meeting due to prior commitments and had asked that William J. Joyce, head of Special Collections and Rare Books at Princeton University's Firestone Library represent SAA for the first time. The Pittsburgh Regional Library Center, another new NAC member organization with PRLC's executive director, **H.E. Broadbent III**, as its representative, was also welcomed. The last application for NAC membership, approved at the December 1986 meeting, was from Utlas International Canada, and their vice president of marketing, **Harriet Velazquez**, was welcomed as Utlas's representative. Because of the addition of the four new members, NAC membership increased to thirty in April 1987. Avram expressed hope that the four new members will become active participants in future NAC discussions.

At the end of her introductory remarks, Avram acknowledged the Information Industry Association's new representative, Robert Asleson, president of International Thompson Library Services, who replaces Brett Butler, president of Infour. IIA selected another representative, because Infour is no longer a member of IIA.

NAC at Other Meetings

Avram then announced two upcoming meetings in which NAC activities will be discussed. The Special Libraries Association planned a special program of NAC activities during its annual conference in Anahaim (June 7, 1987) with a focus on NAC's history and recent activities regarding nationwide networking. The second meeting, during the American Library Association's Annual Conference in San Francisco (June 29, 1987), is sponsored by the Association of Specialized and Cooperative Library Agencies Multitype Library

Networks and Cooperative Section. Its focus is the last four NAC meetings that led to the agreed-upon common vision statement and the action agenda to achieve that vision.

Regarding the NAC vision statement, Richard Akeroyd representing the Chief Officers of State Library Agencies, announced that COSLA will devote half a day at its annual conference in October 1987 to present the vision statement to COSLA members at that time.

Membership Subcommittee Report

Lois Ann Colaianni, chair of the NAC membership subcommittee, presented the report on NAC membership activities. She announced the new members of the subcommittee: Richard Akeroyd, COSLA; Henriette D. Avram, LC; Robert L. Oakley, AALL; Sandra K. Paul, Association of American Publishers; C. James Schmidt, Research Libraries Group, Inc.; and Louella V. Wetherbee, AMIGOS Bibliographic Council. Colaianni reported that during the coming months the subcommittee will work on the revision of the NAC criteria.

Action Agenda Progress Reports

The first group of progress reports on the NAC action agenda, comprising twenty-nine tasks toward the realization of a common vision for library networking and adopted by the NAC membership at their December 1986 meeting, were due at the spring 1987 NAC meeting. The individual reports--grouped by categories--are summarized below.

1. **Documents, surveys, recommendations**--tasks 1, 5, 15, 18, 19, 23, 25, 29.
   Tasks 1 and 5 combined--creation of a practical "handbook for networking" which should also include an overview of state multitype networks. A general outline was presented. Task 15--concerned with the cost of library resource sharing and the cost of not sharing. A draft letter proposal to the Council on Library Resources to do a literature review and report of that review was prepared and the final letter proposal will be sent to CLR. Tasks 18 and 23 combined--investigation of how library education curricula address the issues, concepts, and current status of networking and a study on the expansion of the networking component in appropriate parts of library school curricula, based in part on results of the first part of the study. A letter was sent to the Association of Library and Information Science Education requesting such a study. Task 19--collection of information on existing inventories of electronic archives, etc. A letter was sent to the U.S. National Commission on Library and Information Science requesting that such a study be done. Task 25--definition of scope and target audience for a brochure on "linking"; preparation of a proposal; and funding for such a brochure. Work on the outline of the first step has begun. Task 29--definition and setting of

priorities of networking-related research and the recommendation of that list to NAC, research organizations, library schools, etc. A subcommittee will be formed at the next NAC meeting.

2. **NAC program topics, etc.**--tasks 12, 16, 17, 20, 24.
Task 12--regular reports by the executive director of NISO on network related standards and standard issues. The first report was given by Patricia R. Harris at the NAC meeting (see also appendix B). Task 16--impact of new technologies, e.g., CD-ROM on linking and resource sharing and on the concept of "the Nation's Library." This task may become a topic for a future NAC meeting. Task 17--methods of reducing library communications costs--was not recommended as a research proposal. It was added to the list of future NAC programs. Task 20--extension of networks beyond bibliographic data--see under Topics for Future Meetings. Task 24--state networking developments and the role of state agencies in fostering networking among libraries--see under NAC at Other Meetings.

3. **Conferences, programs**--Task 27
Task 27--preparation of (1) a proposal for a conference on networking; (2) an updated "Networks for Networkers"; and (3) funding. An outline for such a conference, regardless of the realization of a second White House Conference on Networking, will be prepared for the next NAC meeting and is to include the identification of co-sponsors; funding sources; length, site, and date of conference; suggested participating members; and the draft of a grant proposal to the Office of Education.

Topics for Future Meetings

Discussions during the program session made it clear that major differences in interpretation of "fair use" in photocopying and varying perceptions and practices in observing the copyright law and contracts regulating use of databases, software, and other properties, still exist. Therefore, all agreed that a second meeting would be needed to discuss policy implications of the above matters.

Intellectual property issues in the library network context is to be the topic for the next meeting. For this meeting, a discussion paper on the issues affecting intellectual property rights of machine-readable data in a library network environment is to be prepared. [The date of the meeting was postponed in September 1987 and the new date agreed upon by NAC members will be March 23-25, 1988.] Avram asked Robert L. Oakley to chair the program planning subcommittee, with Ronald F. Miller as cochair. Also on the subcommittee will be Charles Bourne, Lois Ann Colaianni, Mary Ellen Jacob, Joseph F. Shubert, and Henriette D. Avram. The first planning meeting was scheduled for June 16, 1987. The background paper will discuss such issues as authorship, rights and limitations of rights, copyrightability of databases, derivative works, computer software, compensation to creators, etc.

It was also decided that task 20 of the action agenda, networks beyond bibliographic data, will be the topic for the Fall 1988 NAC meeting. Task 20 had been assigned to Sandra K. Paul.

Adjournment

Avram adjourned the meeting at noon on April 24, 1987, after thanking all attendees for their active participation. She expressed special thanks to the program subcommittee chair, Carol C. Henderson, and members for their excellent preparation of the meeting and the selection of stimulating speakers that addressed the complex topic of intellectual property rights in an electronic age.

APPENDIX A

LIBRARY OF CONGRESS NETWORK ADVISORY COMMITTEE

MEETING AGENDA
April 22-24, 1987

Wednesday, April 22	**BUSINESS SESSION**
8:30 pm	Presiding: Henriette D. Avram o General remarks o Membership Subcommittee report o Action Agenda progress reports
Thursday, April 23	**PROGRAM SESSION**
9:00 am	Chairman's welcome Henriette D. Avram Introduction to Program Session Carol C. Henderson Chairman, program planning D. Linda Garcia, Office of Technology Assessment Framework for and summary of OTA study Robert Kost, OTA Analysis of OTA study Ralph Oman, Register of Copyrights, LC Conceptual framework of copyright law with regard to new technology General discussion
1:30 pm	Michael Remington, Chief Counsel, House Judiciary Subcommittee on Courts, Civil Liberties, and the Administration of Justice Reflections on U.S. intellectual property systems W. David Laird, University of Arizona Library Current bibliographic database ownership issues John Hearty, American Chemical Society, and Barbara F. Polansky, ACS ACS American Journals Online: is it being downloaded, do we care? David Y. Peyton, Information Industry Association Overview of high tech intellectual property issues
4:30	General discussion
Friday, April 24	**PROGRAM SESSION** (cont.)
9:00 am	o Problems/opportunities/plans/policy objectives
10:00 am	**BUSINESS SESSION** Presiding: Henriette D. Avram o Action Agenda progress reports (cont.) o Selects new Program Planning Subcommittee o Date and topic of next meeting.
Noon	**ADJOURN**

APPENDIX B

Status Report on NISO Standards Activities As of April 3, 1987

NISO STANDARDS BEING REVISED

Z39.18-1987
Scientific & Technical Reports: Organization, Preparation, and Production.
SC P

The proposed standard was balloted and approved by the NISO Voting Membership and will be published in 1987. Approved by ANSI BSR March 6, 1987.

Z39.1-1977
Periodicals: Format & Arrangement
SC Q

A revised draft incorporating many of the comments suggested by Voting Members and others is being prepared and will be circulated for vote in 1987. SC Q chair: Jane Tucker, Montgomery County Public Library, 99 Maryland Avenue, Rockville, MD 20850; 301-279-1441.

Z39.21-1980
Book Numbering
SC JJ

A task force composed of Lois Ann Colaianni, Karen Muller, and Emery Koltay is revising the ISBN Standard. The proposed revision will be balloted in 1987. Chair: Lois Ann Colaianni, National Library of Medicine, Bethesda, MD.

Z39.29-1977
Bibliographic References
SC 4

A revised standard will be balloted in 1987. SC 4 chair: Bob Tannehill, Library Manager, Chemical Abstracts Service, P.O. Box 3012, Columbus, OH 43210; 614-421-3600, Ext. 2028.

Z39.48-1984
Permanence of Paper
SC II

Z39.48-1984 is being revised to incorporated coated papers. SC II chair: Betsy Humphreys, National Library of Medicine, Bethesda, MD.

NEW STANDARDS IN DEVELOPMENT

Language Codes (Z39.53-1987)
SC C

The proposed standard was balloted and approved by the NISO Voting Members; it will be published in 1987.

Information Retrieval Protocol (Z39.50-198X)
SC D

The Information Retrieval Protocol, draft standard Z39.50-198X, was circulated to the NISO Voting Members for vote in 1984; negative votes were submitted by OCLC, the American Chemical Society, and the Association of Research Libraries. The negative votes have been tentatively resolved. A revised standard will be balloted in 1987. SC D chair: Ray Denenberg, Network Development Office, Library of Congress, LM-327, Washington, D.C. 20540; 202-287-5795.

Common Command Language
SC G

The committee will focus on specifying the vocabulary, syntax, and operational meaning of commands in a command language for use with online interactive retrieval systems. The draft standard was distributed for comment in March 1986. A revised draft will be balloted 1987. SC G chair: Charles Hildreth, 2054 Brofford Drive, Worthington, OH 43085; 614-889-2941.

Patent Application Data (Z39.61-198X) SC H

Standards Committee H has completed a draft standard for patent applications numbers and has submitted it to the NISO Voting Members for ballot. The balloting period closed April 3, 1987. Balloting results as of April 3, 1987:

11 Yes;
2 No; NFAIS, ASIDIC
5 Abstain;
49 Not Returned.

SC H chair: Philip Pollick, Senior Information Scientist, Chemical Abstracts Service, P.O. Box 3012, Columbus, OH 43210; 614-421-3600.

Bibliographic Data Source File Identification SC J

It is expected that this work will be discontinued.

Romanization SC L

A draft standard Z39.51 Criteria for Romanization Systems was circulated to the NISO Voting Members and other interested parties in September 1984. Two negative votes (Association of Research Libraries and the Association of Jewish Libraries) were submitted, as well as extensive comments. The comments and negative ballots have not been resolved and it is expected that this work will be discontinued. SC L chair: Charles Husbands, OSPR, Widener 88, Harvard University Library, Cambridge, MA 02138; 617-495-3725.

Environmental Conditions for Storage of Paper-based Library and Archival Materials SC R

A final draft was circulated for comment in December 1985 and is available for comment from the NISO Office. It is expected that the Committee will be reconstituted and the SC charge revised. SC R chair: Paul Banks, Columbia University, School of Library Service, 516 Butler Library, New York, NY 10027; 212-280-4178.

Standard Order Form for Multiple Titles (Z39.52-1987) SC T

The proposed standard was balloted and approved by the NISO Voting Members; it will be published in 1987.

Standard Data Elements for Identifying Information Organization SC V

SC V has been redirected to develop a standard for identifying and characterizing information organizations. The proposed standard will include a data dictionary that specifies the required and optional data elements to identify and characterize information organizations in a wide variety of applications. SC V met in October 1986. SC V chair: Marjorie Bloss, Assistant Director, IIT Library, 3300 South Federal Street, Chicago, IL 60616; 312-567-5265.

Non-Serials Holdings Statement (Z39.57-198X) SC W

Balloting on a revised draft closed in March. Balloting results as of April 3, 1987:

30 Yes;
1 No; OCLC.
6 Abstain;
28 Not Returned.

SC W chair: Stephen Paul Davis, Columbia University, Health Sciences Library, 701 West 168th Street, New York, NY 10032; 212-305-3591.

Eye-Legible Information on Microfilm Leaders, etc.
SC Z

The Standards Committee has outlined the components of a draft standard; a first draft will be circulated in 1987. SC Z chair: Louis C. Willard, Harvard Divinity School, Cambridge, MA.

Interlibrary Loan Data Elements
SC AA

A draft standard was circulated to NISO Voting Members and other interested parties for review and comment in September 1986. A revised draft standard is now being prepared and will be balloted by the NISO Voting Members in 1987. SC AA chair: Mary Jackson, Interlibrary Loan Librarian, Van Pelt Library, University of Pennsylvania, 3420 Walnut Street, Philadelphia, PA 19104; 215-898-7558.

Serial Item Identifier
SC CC

The draft standard, Z39.56-198X, was circulated for comment in April 1986. A revised draft will be circulated in 1987. SC CC chair: Wendy Riedel, Library of Congress, Washington, D.C. 20540; 202-287-6452.

Computerized Serials Orders, Claims, etc.
SC DD

A revised draft will be circulated for ballot in 1987. SC DD chair: Asha Capoor, Baker and Taylor, 6 Kirby Avenue, Somerville, NJ 08876; 201-526-8000, Ext. 568.

Volume and File Structure of CDROM (Z39.60-198X)
SC EE

A draft standard, Z39.60-198X, was balloted by the NISO Voting Members January - March 6, 1987; and distributed to interested parties for comment. The SC will meet April 23, 1987 to review the balloting. Balloting results as of April 3 1987:

29 Yes;
2 No; ACS; NBS.
4 Abstain;
30 Not Returned.

SC EE chair: Martin Hensel, 6 Bancroft Road, Wellesley, MA 02181; 617-239-0590.

Computer Software Description
SC FF

SC FF met twice in 1986 and plans to complete a first draft by mid-1987. SC FF chair: Ed Swanson, Head Processing Dept., Minnesota Historical Society, 690 Cedar St., St. Paul, MN 55101-2596; 612-296-4549.

Hard Cover Case Bindings
SC GG

SC GG met in October 1986 and February 1987. SC GG chair: Carolyn Morrow Manns, National Preservation Program Office, Library of Congress, LM G07, Washington, D.C. 20540; 202-287-1839.

Electronic Manuscript: Preparation and Markup (Z39.59-198X)
SC HH

The balloting period on the proposed standard closed December 31, 1986. Balloting results as of April 3, 1987:

27 Yes;
4 No; ASSI; AJL; NLM; RLG.
4 Abstain;
30 Not Returned.

The SC is working to resolve the negatives. SC HH chair: Nicholas Alter, University Microfilms International, 300 N. Zeeb Road, Ann Arbor, MI 48106; 313-761-4700, Ext. 504.

STANDARDS NOW BEING BALLOTED FOR REAFFIRMATION

Compiling Book Publishing Statistics ***Z39.8-1977 (R1982)***	Balloting period: April 1 - June 1, 1987
Directories of Libraries and Information Centers ***Z39.10-1977 (R1977)***	Balloting period: March 9 - May 11, 1987
Book Spine Formats ***Z39.41-1979***	Balloting period: April 1 -June 1, 1987

☆U.S. Government Printing Office : 1988 - 207-291/80063

NETWORK PLANNING PAPERS

No. 1 Butler, Brett. *A Nationwide Location Data Base and Service.* (Washington, Library of Congress, 1978). 66 p.

No. 2 Dataflow Systems. *A Glossary for Library Networking.* (Washington, Library of Congress, 1978). 34 p.

No. 3 Buchinski, Edwin J. *Initial Considerations for a Nationwide Data Base.* (Washington, Library of Congress, 1978). 56 p.

No. 4 Network Technical Architecture Group. *Message Delivery System for the National Library and Information Service Network—General Requirements.* (Washington, Library of Congress, 1978). 35 p.

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